AMIGA USER INTERNATIONAL

APRIL 1989

£1.95
USA $4.50

THE AMIGA ENHANCED!

VIDEO EFFECTS

3D

ICON PAINT

SUPERPLAN

GFA BASIC

PLUS

AMAZING AMIGA ART

AND

EXCLUSIVE SPECIAL OFFERS!!

SAVE £5 ON AN A500 CONTROL CENTRE!

SUPER HANG ON

SPACE HARRIER

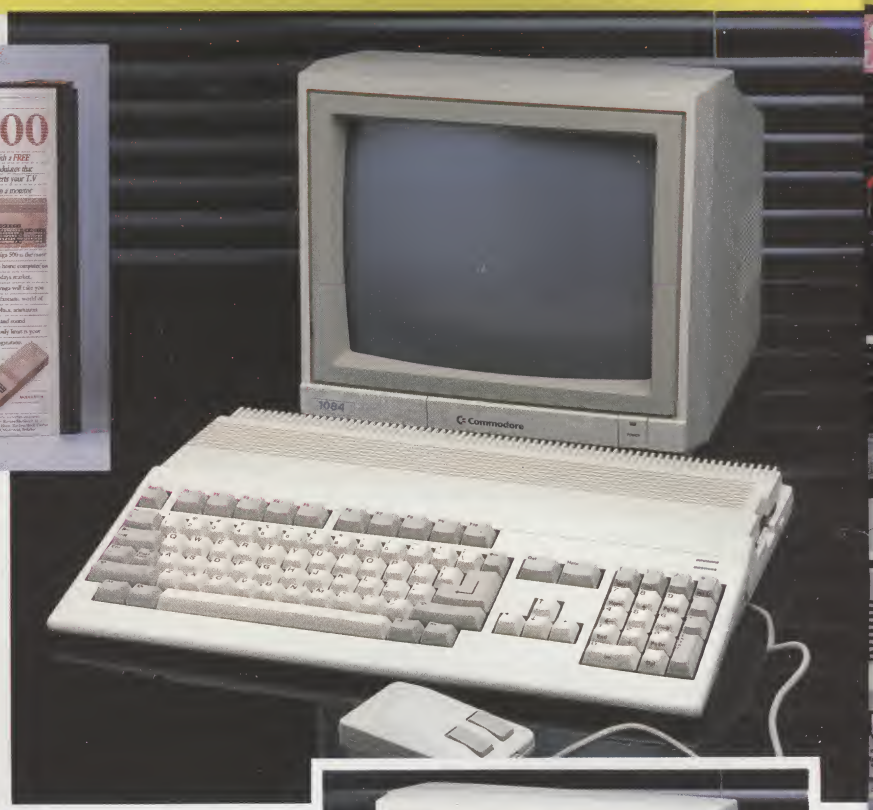
IK PLUS

WIN FUTURE SOUND 500 AND MEMORY EXPANSIONS

0 74470 12129 9 04

THE AMAZING AMIGA . . . . .

COMMODORE AMIGA 500



Pack Includes:
A500 CPU, Mouse, P.S.U., T.V. Modulator, Very First Tutorial, Workbench 1·3, Basic, Extras and Manuals.

PLUS POSTRONIX BONUS PACK

WORTH OVER £250 which includes 10 Blank Disks, Disk Storage Box, 10 Excellent Games, Mouse Mat, Mouse Bracket (Mouse Holder) Deluxe Paint.

£399.00 + £5.00 post and packing

AMIGA 500 PLUS DISK DRIVE

Instruction Manuals, Extra Disk, Workbench 1·3, The Very First Tutorial, T.V. Modulator, Photon Paint, Mouse **PLUS** additional Amiga Compatible Disk Drive and 10 Blank Disks.

£449.00 + £5.00 post and packing.

AMIGA 500 + 1084S STEREO/ COLOUR MONITOR

(including the Amiga 500 deal) **£649.00**
+ £10.00 post and packing

1084 HIGH RESOLUTION COLOUR MONITOR

1084S STEREO/COLOUR MONITOR

Compatible with PC, Amiga, C64c, C128

£259.00
+ £5.00 post and packing

MPS 1500C

MPS 1200P

MPS 1200P

£229.99
+ £5.00 post and packing

The Commodore MPS1200P printer presents the state of the art in dox matrix printers, with all the features of a printer that would cost much more. The MPS1200P is designed to be like three printers in one. It can act just like an Epson FX printer, or with the flip of a switch, it can act just like an IBM Graphics Printer with IBM Group II-I character set (Danish/Norwegian character set) support. It can also print all the characters available with the Amiga in the Amiga configuration. The MPS1200P is capable of all the printing functions you would expect, as well as some additional features you may not expect.

MPS 1500C COLOUR PRINTER

£199.99
+ £5.00 post and packing

A. TECHNICAL CHARACTERISTICS
PRINTING TECHNIQUE .....Impact dot matrix (9-needle print head).
DRAFT MODE ..... – matrix: 9 vertical dots x (5 + 4) horizontal dots; – print speed: 120 char/s, at 10/char in
TABULATION SPEED .....2 char/s
PRINTING DIRECTION .....bi-directional, with optimised head movement
PRINT PITHES .....10 char/in to 24/char/in programmable from line, and in SET-UP mode
LINE FEED ..... – 1/6in (4.23 mm), 1/8 (3.17 mm) and 7/72 in (2.4 mm); – n/216 in and n/72 in.
CHARACTER SET .....ASCII characters and special characters.
MAX. PRINT LINE LENGTH .....40 top 192 characters, according to print pitch selected.

AMIGA 1010 DISK DRIVE

AMIGA 1010 DISK DRIVE

Amiga 3.5" external drive. Capacity 880K

PLUS FREE DISK STORAGE BOX & 10 BLANK DISKS

£149.99
+ £5.00 post and packing

A501 RAM PACK

512K for the Amiga

£149.99
+ £5.00 post and packing

NEW

ONLY

A whole new
omputer co
urable clear
it your comp
nly safe fro
orms of acci

LARGE STOCKS
ALL MAJOR GA

. . . AND MORE BESIDES!

COMMODORE OLYMPIC PACK

THIS TOPICAL GAMES COMPENDIUM OFFERS A TRUE SPORTING CHALLENGE

Pack contains: C64c Computer 1530 Datasette, Quickshot Joystick, Matchpoint (Tennis), Snooker, World Championship Boxing, Daley Thompsons Supertest, Hypersports, Basketball, Matchday II, Daley Thompsons Decathlon, Basket Master, Track and Field.

PLUS POSTRONIX BONUS PACK OF £100 OF FREE SOFTWARE

£149.99

+ £5.00 post and packing

COMMODORE FAMILY ENTERTAINMENT

AN EXCELLENT PACK PROVIDING HOURS OF ENTERTAINMENT FOR ALL THE FAMILY

Pack includes: C64c Computer 1530 Data Cassette, Quickshot II Joystick, Personal Hi-Fi, Commodore Juke Box Audio Tape (10 Hits), Yamaha SHS10 FM Digital Keyboard with Midi, Ghostbuster, Rollaround, Tau Ceti, Agent X11, Surprise Game.

Plus: POSTRONIX BONUS PACK OF £100 OF FREE SOFTWARE

ONLY **£199.99**

+ £5.00 post and packing

1541 DISK DRIVE PACK

1541 II DISK DRIVE PACK

Pack includes:
1541 II Disk Drive, 10 Excellent Disk Games, 20 Blank Disks, 5¼" Diskette Storage Box. AND GEOS!

£169.99

+ £5.00 post and packing

THE HOLLYWOOD PACK

A GREAT DOUBLE THEME PACK OFFERING THE BEST OF HOLLYWOOD, PLUS A COMPENDIUM OF T.V. GAME SHOWS

Pack includes: C64c 1530 Data Cassette, Quickshot II Joystick, The Great Escape, Miami Vice, Platoon, Rambo, Top Gun, Every Second Counts, Blockbusters, Bullseye, Trivial Pursuit, Krypton Factor.

Plus: POSTRONIX BONUS PACK OF £100 OF FREE SOFTWARE

ONLY **£149.99**

+ £5.00 post and packing

ICONTROLLER

ICONTROLLER

Icontroller is semi permanently mounted on your computer console. Icontroller leaves hands on the keyboard while executing Icon commands with your fingertips.

£15.99

COMMODORE ADD-ONS

A) 1750 RAM EXPANSION MODULE FOR CBM 128

Simply plug it into the expansion port on your CBM 128 and 512K Bytes of additional Ram are available.

B) 1351 COMMODORE MOUSE

The Commodre 1351 Mouse is controller designed for use wth the CBM 64/128.

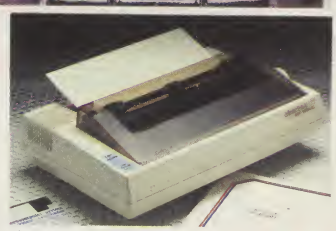
C) 1764 RAM EXPANSION MODULE FOR COMMODORE 64

How do you get a total of 320K Ram on your 64, just plug in the 1764 Module.

A **£149.99** B **£19.99** C **£99.99**

All prices + £5.00 post and packing.

SEIKOSHA PRINTER



SEIKOSHA PRINTER

Compatible with most makes of Commodore computers. Features variety of fonts including graphics and near letter quality, reverse printing, italics, tractor feed and paper seperator. Comes complete with serial cable.

£159.00

+ £5.00 post and packing

STARFIGHTER

Compatible with Sinclair Spectrum, Commodore. Atari Computers. Atari 2600 Video Games Systems.

£14.95

CHEETAH 125+

Compatible with Spectrum. Commodore. Atari 2600 Video System. Atari. Amstrad PC. Amstrad.

£8.95

SLIK STIK JOYSTICK CONTROLLER

Compatible with Atari Computers. Atari Games System. Commodore.

£6.99

RAM DELTA DELUXE MICROSWITCH JOYSTICK

Compatible with Atari computers and Video Games Machines. Amstrad PCW (with adaptor). Spectrum (with adaptor). Commodore.

£9.99

CHALLENGER DELUXE

Compatible with Spectrum (with optional interface). Commodore. Atari 2600 Video System. Atari Computers. Amstrad computers.

£4.99

TAC 5 CONTROLLER JOYSTICK

Compatible with Atari. Commodore.

£13.99

COMPETITION PRO 5000

Compatible with Commodore 64 and Vic 20. Sinclair ZX Spectrum (interface required).

£14.95

TAC 2 CONTROLLER JOYSTICK

Compatible with Commodore 64 and Vic 20. Atari Computers. Atari Game Systems.

£10.99

MICRO HANDLER MULTI FUNCTION JOYSTICK

Compatible with Commodore. Commodore C16/+4 (adaptor required). Atari.

£24.95

ONLY AVAILABLE FROM POSTRONIX LTD

A whole new range of innovative computer covers, made from durable clear plastic. Designed to fit your computer perfectly … not only safe from dust but also all forms of accidental damage.

C64 OLD STYLE	£6.99
C64C NEW STYLE	£7.99
AMIGA 500	£9.99
ATARI 520ST	£9.99
ATARI 1040ST	£9.99

LARGE STOCKS OF SOFTWARE & ACCESSORIES FOR ALL 16 BIT, 8 BIT COMPUTERS – ALSO ALL MAJOR GAME CONSOLES – PHONE (0604) 791771 NOW WITH YOUR REQUIREMENTS.

postronix

TITLE (TICK) MR. MRS. MISS | INITIALS | SURNAME

ADDRESS

SEND YOUR ORDER TO:
POSTRONIX
NENE ENTERPRISE CENTRE
FREEHOLD STREET
NORTHAMPTON NN2 6EW

OR PHONE 0604 791771
24 HOUR ORDER SERVICE

ALL SOFTWARE ITEMS ARE INCLUSIVE OF P/P. ALL HARDWARE ITEMS ARE £5.00.
FOR NEXT DAY DELIVERY £10.00 P/P.
(CREDIT CARD & CASH ORDERS ONLY).

CUSTOMER NO (IF KNOWN) | POST CODE

AC/DBNOV

CATALOGUE ITEM NO.	DESCRIPTION	ITEM PRICE	QTY	TOTAL PRICE

IF YOU REQUIRE A FREE CATALOGUE PLEASE TICK ☐

PLEASE DEBIT MY CREDIT CARD

SIGNATURE ..... DATE .....

(CARD HOLDERS PLEASE STATE EXPIRY DATE)

OR ENCLOSE CHEQUE/ POSTAL ORDER FOR £ CHEQUE PAYABLE TO POSTRONIX

SEE NOTE

TOTAL GOODS
POSTAGE & PACKING
GRAND TOTAL

OFFER APPLIES TO U.K. ONLY. OVERSEAS ORDERS CHARGED AT OVERSEAS RATE.

AMIGA USER INTERNATIONAL

APRIL 1989 Volume 3 Number 4

CONSTANT FACTORS

5 Amiga **Dimension:** Publisher Antony Jacobson comments on a million Amigas

6 Newsfile: Stop Press! The latest, greatest, hottest news..

49 Subscribe: What a status symbol – AUI through your letterbox every month!

71 PD Reviewed: Stuart Williams samples some jam-packed disks

98 Amiga Answers: This month's queries – corrupted disks, products and programs

TEST DRIVE

18 Video Effects 3D: No funny glasses needed for this professional level package

14 FutureSound 500: Digitising made affordable

16 Icon Paint: Colourize your Workbench

54 Further Enhancements: The Amiga evolves to 1.3

61 GFA Basic: Andy Eskelson 'interprets'

64 Superplan: Manage your money and your time

74 ZVP Videostudio: A story of what could have been..

77 Lattice 5.0: Calling all C programmers – 5.0 is here!

89 TR Sketch: A 'sketchy' program, with similar results

FIELD REPORTS

32 Information Technology: Hardcopy reviewed by Daphne Moss

46 Heard It On The Grapevine: Rumours relayed by Tony Horgan

48 Preview: Deluxe Paint III – Catch the first glimpse of the long-awaited update

58 Amiga Art: Illustrations by Sharon Long, Amiga Artist of the Month

102 Compunet: On-line communications – is it your turn to log on?

103 AmigaDOS Inside and Out: Yet another Abacus offering

21 MIDI IV: MIDI data and the serial port

22 Amiga – An Introduction: Part III in our series for novices (and veterans!)

90 To The Rescue: Betty Clay completes the series on the floppy disk filing system

Next month: Deluxe Paint III, MiniGEN, Professional Draw, Falcon, Populous – plus more special offers and fantastic prizes! Order your A.U.I. now!

MENTOR

24 Documentation Design: A useful programming habit

69 Calculating Amiga: AmigaBASIC uses in radio calculations

84 Intuition: Part II in the exciting series on the Amiga interface

92 DTP Print: Printing options for your Amiga masterpieces

SPECIAL OFFERS

12 DataStar 8000M: You can own the smallest pocket computer in the world!

52 A500 Control Centre Offer: Protect your Amiga with this sturdy device from Precision

76 The great Amiga cover-up!

82 Binders

105 AmiKit: Workbench or CLI queries? All the answers – right here!

ENTERTAINMENT

26 IK+

28 20,000 Leagues

34 Super Hang On

38 Charon 5

39 Technocop

40 Zany Golf

42 Space Harrier

50 Blasteroids

66 Elite

89 Goldrunner II

WIN!

5 FutureSound 500s and 1/2 Meg expansions.

See page 97

AMIGA USER INTERNATIONAL

Managing Editor and Publisher
Antony Jacobson
Editorial Co-ordinator
Mark Smiddy
Editorial Co-ordinator
Nancy Picard
Staff Writer
Tony Horgan
Consultant Art Editor
Graham Baldock
Assistant Art Editors
Rico Gusman
Janice Cook
Production Co-ordinator
Lucya Szachnowski
Production Controller
Sandra Gallagher
Advertisement Manager
Billy Brown
Financial Director
B.J. Lewis M.Sc. F.C.A.

AUI CONTRIBUTORS
Andy Eskelson, Betty Clay, Bill Harvey, Bob Chappell, Daphne Moss, John Walker, Julia Forrester, Mike Nelson, Paul Andreas Overaa, Peter Lee Stuart Williams, Susan Maxwell, Yuri Large

Cover art by Sharon Long.

Telephone 01-278 0333
Editorial ext: 274
Advertising ext: 280/286
Subscription ext: 274
Published by
Croftward Limited
Finsbury Business Centre
40 Bowling Green Lane
London EC1R 0NE
Distributed by Comag,
Tavistock Road, West Drayton,
Middx UB7 7QE
Typeset by Afterimage
Printed by Chase Printers Group

Amiga User International – an independent magazine for Commodore computer users – is not connected in any way with Commodore Business Machines UK Ltd. It is published 12 times per year by Croftward Limited. The publishers do not accept liability for any incorrect statement or errors contained in material from independent sources or authors which may be reproduced from time to time.

© Croftward Limited 1989

THE AMIGA DIMENSION

A leading Amiga hardware supplier announces a DTP development that puts 16 million colours available for Amiga DTP users. A designer who was quite content with his 1 Meg Amiga before finds, when he tries a 2 Meg expansion, he cannot live without his new addition to satisfy his graphic needs with the extraordinary new Photon Cell Animator. Not one, but three really hot new games hit us all on the same day. We receive a report of a school in the U.K. that has 30 Amigas and a small U.S. company announces it has already 40 educational packages of educational software available for the Amiga.

DTP ... Professional Video ... Entertainment ... Education ... The pace is clearly quickening across the whole breadth of the Amiga Dimension. Everywhere the Amiga is moving into higher gear. Improvements, advances, innovations are seen in every issue of *AUI* these days. Our pages are in ever greater demand. The speed of change has suddenly accelerated.

CBM is beginning to approach the DTP market, moving as yet quietly up the route so successfully taken by the Macintosh – at a fraction of the cost of the Apple machine's system. Every day more professional, and amateur, video makers discover that the Amiga can offer brilliant, simple solutions to complex and previously much more expensive problems. Even with the 8, not 2 Meg, which the Photon Cell Animator really needs to exploit its tremendous capability, an Amiga system still costs less than a quarter of work stations of comparable power. It is not surprising that the whole video world is starting to give the Amiga a very warm welcome.

In the games field, all major products are now being written for the Amiga, in some cases first created on it – a very different situation to just a year ago.

"I could kill Commodore", the boss of a small but longtime established U.S. software company said to me. "They just let Apple take the American educational market for years!" But now he has announced he has over 40 educational programs ready as CBM moves into the schools and colleges of the U.S.A. as they are into the educational sector in Europe.

What has brought about this powerful change in the Amiga dimension? Well, the late Arthur Koestler wrote about there being a climate of scientific development in which the same revolutionary discovery would be made in several different places at the same time – an interesting variation of the 'Critical Mass' concept.

Perhaps there are simpler explanations. The Amiga, though friendly to use, is by no means so easy to create for. The developers or programmers are now coming into their fourth year of practical work on this marvellous but difficult computer. They have passed their apprenticeships and the angle of their learning curve is becoming steeper. Even Lattice has reached 5.0!

There is another factor too. About now, or within a short time, no-one, probably not even Commodore will know exactly, the one millionth Amiga will be sold. With a market that size, they are no longer dealing with a minority interest. For the Amiga is probably already one of the world's ten best selling computers ever. With that critical mass, it is no wonder we are seeing a speeding up of development. What is sure is that success, in computers as in anything else, feeds on itself and will ensure that it does not take anywhere near so long to achieve that second million of Amiga users.

Antony Jacobson
Managing Editor
and Publisher

We are sorry that we cannot deal with technical enquiries by telephone, but we welcome letters from readers.

ADVERTISERS DIRECTORY

16 Bit Centre	103
16 Bit Software	93
Applied Visions (UK)	41
Ashcom	99
Amiga Users Group	62
Burocare Graphics	IBC
Bytes + Pieces	95
Calco Software	55
Database	25
Datel Electronics	44/45
Delta Pi	100
Digita International	29
Digipro	65
Digivision Ltd	99
Discovery Software	81
Easyprint	79
Enkay	106
Evesham Micros	13
First Micro	60
Fuller Computer Systems	88
George Thompson Services	30/31
Hammersoft	103
Harwood Computers	36/37
Hi-Voltage	7
Hobbyte	93
Humgold Computers	104
I.C.S. Electronics	103
Image Works	11
Incontrol	103
James Associates	68
Lan Computers	20
Magnetic Media	79
Mediagold	95
Megaland	75
Microdeal Ltd	47
Mindscape Int.	17
Miracle Systems	57
Newtek Inc.	OBC
Official Secrets	80
Once Bytten	93
Photofile	100
Postronix	IFC/3
Robson Electronics	73
Sabre 16	63
S.C.C.	85
S.E.S.	91
Silica Shop	41
Softville P.D. Services	88
Sublogic	60
The Disc Company	9
Trilogic	55
Turtlesoft	51
Wizard Software	99
Zeppelin Games	33

NEWSFILE

Digi-View Gold

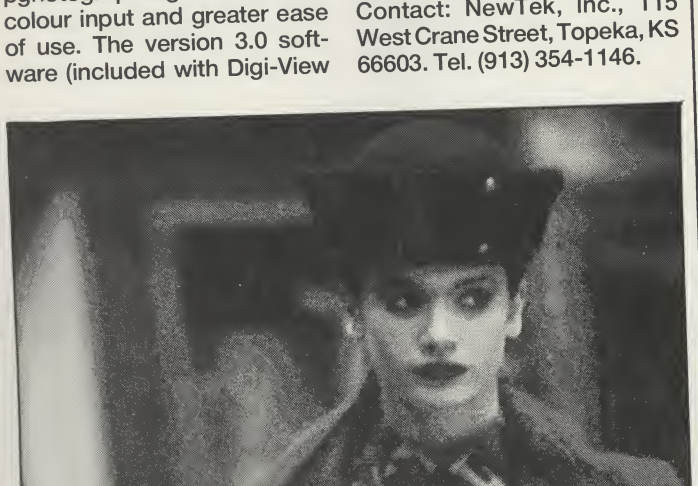
New Tek, Inc., makers of the award winning Digi-View video digitizer, recently announced the release of Digi-View Gold, the new and improved version of Digi-View designed specifically for the Amiga 500/2000 line.

The redesigned hardware for Digi-View Gold offers better image quality by operating directly with the Amiga 500 or 2000 family of computers, with no Gender Changer required. "The new hardware design relieves interference in the system", said Tim Jenison, president of New Tek, "and as a result the final image is improved." Digi-View Gold also works with the Amiga 1000.

The fiolter wheel for Digi-View Gold has also been redesigned to use professional pghotographic gels for cleaner colour input and greater ease of use. The version 3.0 software (included with Digi-View Gold) features line art mode for true two colour digitizing for sharp logos, extra halfbrite mode and overscan digitizing for professional video use. Digi-View Gold's powerful image processing supports all Amiga resolution modes. Digi-View Gold also contains New-Tek's exclusive Enhanced Hold and Modify mode for 4,096 colour (all at one time) photographic quality images.

Digi-View Gold is fully IFF compatible so that all images captured can be used for desktop publishing, presentations, or video. Digi-View Gold captures images in 2.1 million colours, the highest resolution of any Amiga digitizer, and includes the ability to remap pictures between all Amiga resolution modes.

The new Digi-View Gold package with the redesigned hardware, version 3.0 software, new filter wheel and manual remains at a suggested retail price of $199.95. Contact: NewTek, Inc., 115 West Crane Street, Topeka, KS 66603. Tel. (913) 354-1146.



MI Tank

Microprose Software Inc., is preparing to tread new ground with the release of a simulation of the 60-ton MI Abrams, the brand new main battle tank of the U.S.Army.

To be released in the Summer of 1989 for IBM-PC/Tandy-/compatibles, the yet-unnamed tank game has already absorbed more than a year's software R&D effort. Designer Arnold Hendrick, well-known for his work on F-19 Stealth Fighter, Red Storm Rising and Pirates!, explains that accurately portraying movement over uneven terrain presents major software engineering challenges.

Microprose claim it is using authentic information from three Army maunuals because they "want this simulation to be done right."

The tank combat simulation will support the VGA/MCGA, EGA, CGA, Tandy and Hercules graphics modes, and will be hard disk installable with a key disk copy protection routine. Use of a joystick will be optional, and 384K of RAM will be required. Contact: Microprose, 2, Market Place, Tetbury, Glos GL8 8DA. Tel: 0666 54326.

Kings Of The Beach

Electronic Arts has announced the release of Kings of The Beach, the first world tournament 2-person professional volleyball computer game. The program has been designed with the help of two of the players from the U.S.'s number one team, Sinjin Smith and Randy Stoklos and gives the player the opportunity to travel the world to become "King Of The Beach".

Smiths and Stoklos - today's reigning kings of volleyball, have a unique style that is accurately depicted in the game. The player can practise his spokes, bumpa and sets with the kings themselves to prepare for the 20 challengers that await – from wild maniac rookies to other AVP pros.

The game takes the player to some of the world's greatest beaches from Australia to Hawaii and Rio. As the player progresses through 15 gruelling matches he will meet new and tougher opponents in his attempt to become "King of the Beach".

Spike, the players' offiial beach escort will make sure the player gets to all the right places. Exclusive "Pixel-Mate" pin-ups will register the player in the tournaments and share required passwords to proceed through the game.

Kings Of The Beach supports CGA, MCGA, EGA, VGA, Tandy 16 colour graphics mode. The program features a number of skill levels from beginners to advanced and is for one to two players.

Price: £24.95 (available for IBM only).

Contact: Electronic Arts, 11-49 Station Road, Langley, Nr Slough, Berkshire SL3 8YN. Tel (0753) 49442.

R.I.P. G15

Some people are awed by the size of the wooly mammoth as compared with today's elephant. And in a billion years, perhaps we may see even smaller versions of that beast cantering around our living rooms.

But what does this have to do with Computers? Well you may now see the world's first PC, the G15, better preserved than a mammoth, at the Smithsonian Institute museum in Washington DC.

The G15, built 34 years ago by Harry Huskey, now professor emeritus at the University of California, is the size of a refrigerator.

It used 250 vacuum tubes, required 30 to 40 ASmps of power – more than 30 times as much as today's PCs – and needed a rotating magnetic drum for storage. With 12KB of memory, it used Huskey's own programming language, called Intercon, and cost $50,000 in 1954.

Mindware BBS Introduced

Mindware International of Ontario, Canada, has set up a new in-house electronic bulletin board system offering technical support, useful utilities, and on-line conferencing and data exchange with other users for registered owners of Page Flipper Plus F/X and Page Render 3D.

Instant product upgrades will also ve available via the new BBS. According to Andy Thut, chief programmer in Mindware's development division: "New features are being added to our products so fast that there was no better way for everyone to keep up with the changes." The latest version of PageFlipper Plus F/X, for example, now has over 100 new features not present in the first release last August.

Registered owners of all Mindware products can now access the Mindware BBS at no charge by calling 705-737-5017.

Contact: Mindware International, 110 Dunlop St, West, Box 22158 Barrie, Ontario, Canada L4M 5R3. Tel. 705-737-5998 (voice).

OPEN MONDAY-SATURDAY 9 AM-5.30 PM

LONDON'S LARGEST DISPLAY OF PRINTERS MONITORS COMPUTERS AND PERIPHERALS

HI VOLTAGE

The London AMIGA Centre

AMIGA A500 INCLUDING:— MOUSE · WORKBENCH · BASIC · TUTORIAL · UTILITIES · MANUALS · PHOTON PAINT · JOYSTICK · FIVE GAMES · 23 PUBLIC DOM. TITLES **£359**

AMIGA B2000 INCLUDING:— MOUSE · WORKBENCH · BASIC · UTILITIES · MANUALS · FREE 3.5" INT DISK DRIVE **£999**

AMIGA A500/ PHILIPS 8833 INC ACCESSORIES **£599**

AMIGA B2000/ PHILIPS 8833 INC ACCESSORIES **£1199**

AMIGA A500 1Mb/ PHILIPS 8833 INC ACCESSORIES **£675**

AMIGA B2000/ PHILIPS 8833 INCLUDING:— MOUSE · WORKBENCH · BASIC · UTILITIES · MANUALS · XT BRIDGE BOARD · 20Mb HARD DISK **£1995**

PRINTERS

Citizen 120D	£108	Epson LQ1050	£549	Star LC2410	£259	NEC P7+	£624
Citizen 180E	£127	Epson LQ2550	£855	Star NB2410 inc S/Feed	£428	Star LC10	£195
Citizen MSP15E	£189	Epson DFX5000	£1099	Star NB2415	£519	Xerox 4020	£949
Citizen HQP40	£302	Hewlett Packard Deskjet	£548*	Star NB15 inc S/Feed	£499		
Citizen HQP45	£321	NEC P2200	£254				
Epson LX800	£158	NEC P6+	£423	**COLOUR PRINTERS**		**LASER PRINTERS**	
Epson FX850	£286	NEC P7+	£539	Citizen HQP40	£352	Brother HL-8	£1441*
Epson FX1050	£382	Panasonic KXP1081	£128	Epson EX1000	£543	Epson GQ3500	£1109*
Epson EX800	£427	Panasonic KXP1540	£418	Hewlett Packard Paint Jet	£689*	Hewlett Packard Laser Jet II	£1318*
Epson EX1000	£482	Star LC10	£157	NEC P6+	£508	Star LP8	£1335*
Epson LQ500	£258	Star NX15	£289			* inc. 1 yr. on site maintenance	
Epson LQ850	£411						

SOFTWARE

ACCOUNTS

Home Accounts	£18

COMMUNICATIONS

Diga	£36
On line	£20
Ruby Comm	£63

DATABASES

Microfiche Filer	£45
Superbase Personal	£35
Superbase Personal II	£58
Superbase Professional	£136

DTP

Comic Setter	£44
Pagesetter	£54
Professional Page	£160

GRAPHICS

Animate 3D	£80
Animation Effects	£25
Animation Flipper	£28
Animation Stand	£25
Butcher 2	£18
Deluxe Paint II inc D Print	£42
Deluxe Print II	£43
Deluxe Productions	£89
Fantavision	P.O.A.
Introcad	£36
Lights Camera Action!	£39
PageFlipper + F/X	£79
Photon Paint	£43
Sculpt 3D	£52
Sculpt 4D	£280
TV Show/Text	each £42
Videoscape 3D	£86
Videotitler	£70

INTEGRATED

Critic's Choice	£99

LANGUAGES

Devpac	£40
K Seka	£28
Lattice CV5	£150
Macro Assembler	£42
Pascal 2	£54
Shell	£26
Tool Kit	£24

MUSIC

Audiomaster	£28
Deluxe Music Data	£6.50
Deluxe Music	£43
Instant Music	£16
Sonix V2	£35

SPREADSHEETS

Analyse 2	£43
Digicalc	£23
K-Spread 2	£45
Super Planner	£61

WORD PROCESSORS

Kind Words V2	£30
Protext	£60
Scribble V2	£43
Word Perfect 4.1	£130

ACCESSORIES

AMIGA 2000

NEC 3.5" External Drive	£77
NEC 3.5" Internal Drive	£69
A1010 3.5" External Drive	£99
A2010 3.5" Internal Drive	£149
A2088D XT Bridgeboard	£435
A2094 20Mb Hard Disk	£380
A2058 2Mb Board	£550
Impact 20Mb Hard Card	£505
Impact 45Mb Hard Card	£710
Micron 2Mb Board	£500
8Mb Unpop. Board	£180
Flicker Fixer	£330

AMIGA 500

A501 ½Meg RAM	£124
A520 Modulator	£21
Dust Cover	£5
NEC 3.5" External Drive	£77
A1010 3.5" External Drive	£149
Easyl Tablet	£260

VIDEO AND SOUND

Digiview Gold	£105
Perfect Vision	£175
Digipic	£200
Genlocks: Rendale A8802	£245
A8806	£705
Futuresound	£69
Perfect Sound	£65

MONITORS

CBM 1084S	P.O.A.
Philips 8833	£204
Taxan 770 + M/Sync	£433

MODEMS

Amstrad SM2400	(D)	£197
Dataflex Quadcom	(D)	£238
Dowty Quattro	(D)	£483
Miracom WS4000	(A)	£92
Miracom WS3000	(C)	£199
Miracom WS3000	(D)	£296
Pace Linnet	(A)	£98
Pace Series 4 2123S	(A)	£211
Pace Series 4 1200S	(C)	£312
Pace Series 4 2400S	(D)	£381

KEY:— A = V21/V23
B = V21/V22
C = V21/V22/V23
D = V21/V22/V23/V22 BIS

Mail Order + Export Hot Line Phone 01-686 6362

DELIVERY UK MAINLAND
SAME DAY DELIVERY CALL FOR DETAILS
Consumables: £1 + VAT P+P
Hardware: 4 working days £5 + VAT per box. Next working day £10 + VAT per box.
Software: Free of charge.
Lasers: Next working day £15 + VAT.
Saturday delivery P.O.A. Immediate despatch on receipt of cleared payment, normally five working days for cheque clearance.
Fax your order on: 01-681 8939

ALL PRICES EXCLUDE VAT.

ALSO A VAST RANGE OF DISK DRIVES, JOYSTICKS, DISK BOXES, INTERFACES, SHEETFEEDERS, ETC.

HI VOLTAGE **Dept. AUI, 53-59 High Street, Croydon, Surrey CR0 1QD. Fax: 01-681 8939. Tel: 01-686 6362**

Prices correct at copy date. Subject to change without notice due to currency fluctuations etc. E. & O.E.

OPEN MONDAY-SATURDAY 9 AM-5.30 PM

OPEN MONDAY-SATURDAY 9 AM-5.30 PM

MDS Printer Stand

Custom-made computer furniture specialists, MDS Industries (UK) Limited has launched its new MD system printer stand.

Designed for efficiency, and as part of a cpmprehensive modular desk system, the MDPS 750 printer stand measures 750mm wide, 710mm high and 750mm deep and has an 18″ cut-out in the top; it is suitable for both top and bottom feed printers.

Two chrome plated baskets hook on to the modesty panel to provide an efficient paper feed and catchment facility. The stand is finshed in a mid-grey colour.

Two contrasting cable-way mouldings, located on the right and left of the printer stand top, allow cables from peripherals to be fed down through the ducted stand legs into foor or wall sockets.

Optional extras available include 2″ castors which can be fitted for mobility, and a channel cable tray.

The products are available either as standard items from the MDS catalogue or they can be custom-made to a company's own specifications as part of the free design service available from MDS.

Contact: Pat Stedman or Keith Dunning, MDS Industries (UK) Limited, Factory No. 1, Ebberns Road, Hemel Hempstead, Herts HP3 9QS. Tel:0442 231305.

Raider

Impressions has announced it s first release, Raider, released in mid March.

Following the death of the Galactic Emperor the Border Raiders have seized the opportunity to rebel and capture eight primary deep sace Colonies. They will destroy the Star System unless their demands are met.

To save the Star System, you must fly through a set of four planets and you must kill every turret on each planet before the powerplant (Cog) appears. Tractor up the Cog and fly to the next planet. Once you have all 4 Cogs you appear in the powerplant.

In the powerplant you gave a limited time period to reach the middle, position all four Cogs and fly out again.

Features: 40 levels, 8 planets, extra level, gravity mode, inverse gravity mode, and an invisibility mode. Available for the Amiga. Price: £19.99.

Hand Held Colour Scanner

ASDG Incorporated has announced the introduction of the new SHARP JX-100 colour scanner to the Amiga market. The Sharp JX-100 is not only the smallest colour scanner in the world, it is also the first hand held scanner to be made available to Amiga users, ASDG claims.

Working in cooperation with Sharp Electronics Corporation, ASDG has introduced ScanLab/100, a new hardware/software combination that links the JX-100 and any Commodore Amiga 500, 1000 or 2000 computer.

In addition to a proprietory cable that converts the high speed interface of the JX-100 for use on the Amiga, ScanLab/100 will come complete with many of the same advanced colour processing capabilities, virtual memory and friendly user-interface already used in ASDG's Professional ScanLab.

The JX-100 can scan an area of approximately 4″ by 6″ at 200 dpi. It will offer many of the same capabilities as Sharp's more professionally oriented scanners, including the ability to do black & white, grey scale and colour scanning for high quality desktop publishing.

ScanLab/100 is the latest addition to ASDG's Professional ScanLab family of software/hardware solutions that allow complete compatibility between the Amiga and Sharp's JX-100, JX-300, JX-450, and JX-600 line of colour scanners.

Best-known among Amiga users for such innovative and widely used products as the Recoverable RAM Disk, FACC II and the first 8 megabyte memory expansions for the Amiga 2000, ASDG's most recent releases include Twin-X, a universal input/output board for the Amiga 2000, and CygnusEd Professional. Price:$995.00. Contact: ASDG, 925 Stewart Street, Madison, W1 537 13, Tel:(608) 273 6585

Sprint 11/40

Qume has reduced the price of the Sprint 11/40 daisywheel printer to £795 until the end of April. The 11/40 is a robust model which runs at 40 c.p.s. and has a maximum width of 13.2 in.

Up to 100 printwheels can be used with the printer to give different typefaces as well as mathematical and scientific symbols, and foreign languages. Single and dual sheetfeeders are available for printing large runs. Contact: Eric Lee, Qume Ltd, Tel:0635 523200

40Mb Hard Disk Subsystem

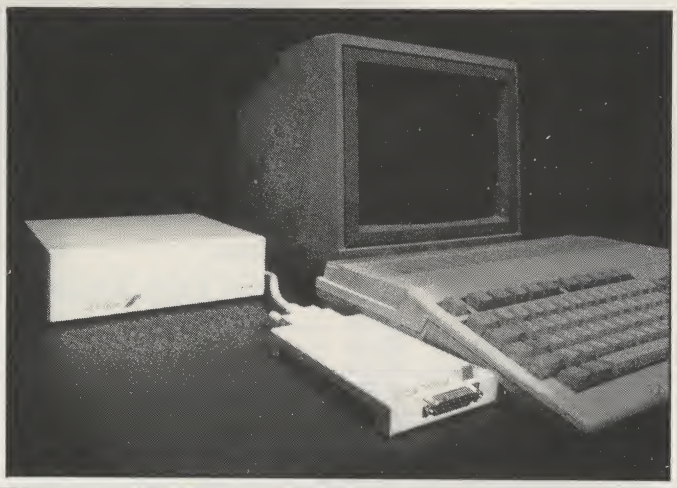
Ideal Hardware, the specialist PC mass storage distributor, is marketing a new 40Mb hard disk drive subsystem from Vortex Computersysteme GmbH of West Germany, that solves the problem for Commodore Amiga users of replacing incompatible or redundant disk drives when uprading their PCs.

Called the System 2000, it comprises a base unit containing a hard disk drive, a power supply and a controller, and a unique add-on module, called a 'personality module', which provides the interface between the base unit of the subsystem and the PC.

Up to eight System 2000 base units can be 'daisy chained' together to increase disk capacity, requiring just one personality module. The complete subsystem, including base unit and personality module is priced at £499 and additional 40Mb base units can be purchased for £399.

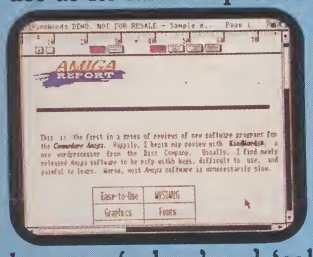
The base unit is configured with a conventional 3.5″ hard disk drive with an average access time of 45ms.

System 2000 subsystems can be installed in a wide range of incompatible PCs. Personality modules are currently available for the Commodore Amiga 500 and Amiga 1000, and any PC compatible with a PC compatible expansion slot. Price £195. Contact: Ideal Hardware Limited, Tolworth Tower, Surbiton, Surrey, KT6 7EL. Tel:01-390 1211.



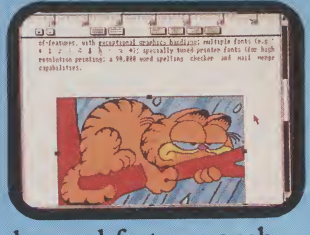
KINDWORDS

Impressive reviews? They'll be lost for words when they see the new KindWords 2.0. It's still as easy to use as its famous predecessor but now boasts a new 100,000 word English dictionary licensed from Collins, a 470,000 word thesaurus and automatic hyphenation.

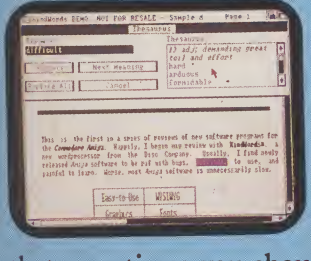


So it knows the difference between 'colors' and 'colours' and how to use them. Because with KindWords you can easily import graphics into your text documents and produce professional documents that really impress.

As it was designed specifically for the Amiga, KindWords works with your computer, not against it. Pull down menus and full help facilities are used to the maximum advantages – so advanced features such as spell checking and mail merging are easily accomplished.

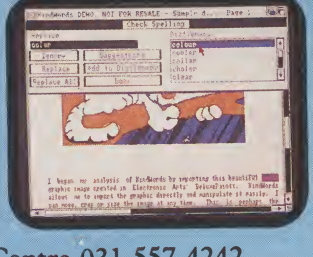


There's a new extensive font library which combines with graphic editing facilities that make KindWords an extraordinary word processor at an unbelievable price.



Which only goes to prove that sometimes you should believe what you read in the press.

Existing KindWords users can upgrade their software for £14.95 inc VAT by calling 010 331 455 310 53 or write to Disc Company Europe, 1 rue du Dôme 75116, Paris, France. Visa, American Express accepted.



Dealers should call Amiga Centre 031-557 4242, GEM 0279-412441, HB Marketing 0895-444433 or Microdealer 0908-74000.

Price
£49.95
inc VAT.

THE DISC COMPANY

MORE KINDWORDS

"The excellent KindWords includes everything you'd expect to see in an Amiga word processor with many extras."

ST Amiga Format

"KindWords is considerably cheaper than most Amiga word processors... its documentation is well produced and readable... contains quite a number of advance features... good value for money"

Amiga Computing

"KindWords is stylish and uncluttered... simple and elegant with a lot going for it... KindWords is a program written with care, everything about it shows consideration for the user."

Amiga User International

"I found KindWords both powerful and flexible... I think most users will be delighted with KindWords' logical design and power."

Commodore Magazine

"KindWords Superfonts produce attractive, high-quality printouts even from inexpensive dot-matrix printers."

Amiga World

High Density Datalife Plus

Verbatim, the magnetic media subsidiary of Kodak, has announced the extension of its teflon-coated diskettes; Datalife Plus. The concept of teflon coating for data protection coupled with DOS-formatting for ease of use has been extended into the 5@Highg Density format.

The new Datalife Plus MD-2-HD can be used on PC's and compatible straight from the box, thanks to DOS Version 3.3 pre-formatting at the time of manufacture. Once used the teflon coating protects the data like no other disk can.

Contact: Verbatim Limited, 13 Mole Business Park No 3, Leatherhead, Surrey, KT22 7AQ. Tel:(0372) 37755.

Mindscape signs up Mirrorsoft

Mindscape Inc., one of the leading U.S software publishers has signed up a North American publishing agreement with Mirrorsoft, at present the top U.K 16 bit software company. The agreement gives Mindscape the right to publish in the United States and Canada multiple titles from Mirrorsoft's recently created Image Works label.

The Image Works line utilizes top European programming talent to create games with outstanding graphics, exciting action, and depth.

The first Image Wroks product to be released by Mindscape will be Speedball, the futuristic arena sports game where players use cunning, courage and strength to bribe officials, tackle opponents and hurl a metal ball around a dangerous steel arena.

Speedball, written by the award-winning Bitmap Brothers, will be available in the U.S. in March 1989.

"Image Works looks like it's going to have a really original line of hot new products," said Roger Buoy, president and CEO of Mindscape. "These games are exactly what the American consumer is looking for, and we're excited to be bringing them to the U.S. market."

Mirrosoft managing director Peter Bilotta added, "Image Works has had a phenomenal initial reaction in Europe, and I expect demand to be just as great in America. Our previous work with Mindscape has proven them to be a very quality-conscious company; I'm glad they're our partner in the U.S."

Editorial Note: *In the March issue of AUI, sections of the MIDI article were unreadable. For those readers who are interested in the article, please send a stamped, self-addressed envelope and we will send you the complete article by first class post. We regret any inconvenience this may have caused.*

DTP Clip Art

The Advertiser's Collection gives over 50 different multi-purpose frames, headers and logo graphics for use in advertising and sales promotion materials. The images can be imported into pages created using any PC desktop publishing software which can accept .PCX or .IMG files.

The Advertiser's Collection graphics can also be loaded into graphics programs such as PC Paintbox, Publishers' Paintbrush and Gem Paint, for further editing.

The Advertisers' Collection graphics are supplied at 72 dpi resolution, but most are of large enough size to allow for reduction.

Use the Advertisers' Collection with: Ventura Publisher; Aldus Pagemaker; Fleet Street Editor; Gem Desktop Publisher; Timeworks Desktop Publisher; on the IBM and compatible PCs.

The Advertisers' Collection images have been developed by Adverkits International, Europe's largest supplier of syndicated artwork to regional newspapers.

The Advertisers' Collection is supplied in .PCX format on one 5.25″ disk and in .PCX and .IMG format on one 3.5″ disk. Price: £29.99 + VAT.

Contact: Mirrorsoft, Headway House, 66-73 Shoe Lane, London EC4P 4AB. Tel:01-377 4645.

Maltese Joe Barbara

3D-Pool, Firebird's sports simulation game has been endorsed by the current UK and European Pool Champion – Maltese Joe Barbara.

Four times winner of the London Weekend TV Shoot Pool Championship (1983, '84, '85 and '87), Joe will be featured in the game and on the packaging.

Firebird tells us that Joe started playing snooker during his youth in Malta and continued when he moved to the Isle of Wight in 1967. After discovering Pool in a pub (in his youth? Ah, well...), he toured the Pool circuit around Leicester Square and the West End. And it was there that a victim of his playing skills – who lost £6000 to Joe – acknowledged Joe's potential and became his backer.

Nine years ago Joe turned professional after an invitation by the English Pool Association. (They were obviously tired of losing their money and decided to legitimize him!)

3D Pool incorporates a "move around the table" feature – allowing shots to be played from any position; and, you can spin the ball just like in the real game.

Battle your way through the gruelling knock out tournament against such cue happy opponents as Flash Harry, Mighty Mike, Catford Kid and Fast Freddy. You must win three rounds before you can pit your skills against 'Maltese' Joe in the final.

But before entering the tournament, why not improve your skills by playing against a friend and practicing your trick shots. Alternatively, sit back and suss out your opponents during their practice sessions.

3D Pool will be available for the following formats on the 18th April:

Commodore 64 (Cassette) £9.99; Commodore 64 (Disc) £12.99; Amiga £19.99.

FULL WARNING STATUS: CONDITION RED

BLASTEROIDS®

AMIGA SCREEN SHOTS

THRUSTER • LAUNCH!
WARRIOR • LAUNCH!
SPEEDER • LAUNCH!

STRAIGHT FROM THE ARCADES COMES *BLASTEROIDS.* TENGEN'S CLASSIC MIX OF ONE OR TWO PLAYER ACTION. WITH FULL POWER-UPS, RIP-STARS, SHIELDS, DOUBLE-UP AND MORE. THIS IS *THE* COIN-OP CONVERSION OF 1989.

AND BEWARE – MUKOR AWAITS!

COMING SOON FOR COMMODORE AMIGA £24.99; ATARI ST £19.99; C64 SPECTRUM, CPC AND MSX DISK £14.99, CASSETTE £9.99.

image works™

© 1987 TENGEN. ALL RIGHTS RESERVED. © 1989 MIRRORSOFT LTD. ALL RIGHTS RESERVED.

HEADWAY HOUSE, 66-73 SHOE LANE, LONDON EC4P 4AB. TEL: 01-377 4645.

LEAF-BLA

"The SMALLEST pocket computer in the world"

ONLY £22.95

Keep your whole address book and lots more vital information on a computer just credit card size! Make sure that phone numbers, addresses, dates and other information you need are always at your fingertips with the DataStar 8000M Electronic Notebook.

This mini-miracle – yes, it *is* no bigger than your cheque or credit card! – lets you store up to 8k of information. It even has a special code to keep your data absolutely private. Megalogic, its manufacturer, tells us that the 8000M is the smallest pocket computer in the world! The 8000M may be very small, but it's also very powerful, with a 20-digit alphanumeric display and 7951 characters for programming.

The recommended retail price for the DataStar 8000M is £24.95. However, through this special offer, you can buy it for only £22.95 – saving more than 10%, and postage and packing is FREE!

So you can get the smallest pocket computer in the world (and it's also a calculator, electronic notebook and an alarm clock!) for £22.95 (including batteries and p & p). No more bits of paper, with the DataStar 8000M, wherever you go, you'll have bytes of vital information right in the palm of your hand.

To: Amiga User International
40 Bowling Green Lane, London EC1R 0NE

Please send me ☐ DataStar 8000M Electronic Notebook(s) at the special price of £22.95, including VAT and p&p

Please make cheques payable to Croftward Ltd, or debit my Access Card No:

Signature .....Exp. date.....

Name.....

Address .....

.....

Please allow 28 days for delivery

A9041

Evesham Micros

All prices include VAT/delivery

PRINTERS

All prices include VAT/delivery & cable

LC10

Hugely successful 9 pin printer, the Star LC10 provides 4 NLQ fonts (with 96 print combinations) at 36cps and 144cps draft. Has a large 4K buffer and IBM/parallel interface built in, includes a comprehensive front panel operation and features paper parking, allowing single sheets to be used without removing tractor paper.

Only £199.00

Colour version also available, Only £249.00

Prices include 2 extra black ribbons free of charge.

star

We use and recommend Star printers since they offer an unbeatable combination of features, print quality, reliability and value. Make the sensible decision - get it right with a Star printer at our special, all in, prices.

Star LC24-10 feature-packed multifont 24pin printer	£339.00
Star SF-10DJ / DK cut sheet feeder for LC-10 / LC24-10	£64.95
Star NB24-10 24 pin printer 216/72 cps, including cut sheet feeder and 2 extra ribbons	£499.00
Stan NX-15 good value wide carriage 9 pin printer	£329.00
Panasonic KXP1081 reliable 9pin 10" printer 120/24 cps	£169.00
Panasonic KXP1180 super new 9pin multifont 11.7" carriage	£199.00
Panasonic KXP1124 good quality new multifont 24pin	£319.00
Epson LX800 popular 9 pin 10" 180/25 cps	£199.00
Epson LQ500 24 pin 10" 150/50 cps	£319.00
Epson EPX-200 cut sheet feeder for LX800 / LQ500	£74.95
NEC P2200 budget 24 pin 168/56cps	£319.00
NEC cut sheet feeder for P2200 printer	£69.00
Citizen 120D budget 9pin 10" 120cps	£139.00
Citizen HQP-45 bargain value wide carriage 24pin	£399.00
Star Laserprinter 8 high specification 8ppm / 300dpi laser, (price inc. 1 year on site maintenance)	£1795.00

SPECIAL OFFER AMIGA PACK

Our new special offer pack includes the following:

- ★ Amiga 500 computer
- ★ TV Modulator
- ★ Mouse & Mouse mat
- ★ Joystick
- ★ Photon Paint
- ★ Karate Kid II
- ★ Grid Start
- ★ Goldrunner
- ★ Demolition
- ★ XR 35
- ★ Atax
- ★ Las Vegas
- ★ *plus* 5 disks of public domain s/ware

The total retail value of extras supplied is £270.45.

All this for only £399.00!

Philips CM8833 colour monitor suitable for Amiga 500	£229.00
Philips CM8852 monitor as above, but higher resolution	£299.00
Philips TV Tuner AV7300, use with any composite monitors	£74.95
Cameron Handy Scanner Type 4, 64mm wide, scans up to 400dpi with 16 grey scales, inc. Paint & OCR software	£329.00
A501 RAM/clock expansion	£119.00
Word Perfect	£149.95
Superbase Personal	£69.00
Superbase Professional	£179.00
Logistix	£79.95
A500 Dust Cover	£4.95

DOUBLE TAKE!

PYE 15" FST TV/MONITOR

(MODEL 1185)

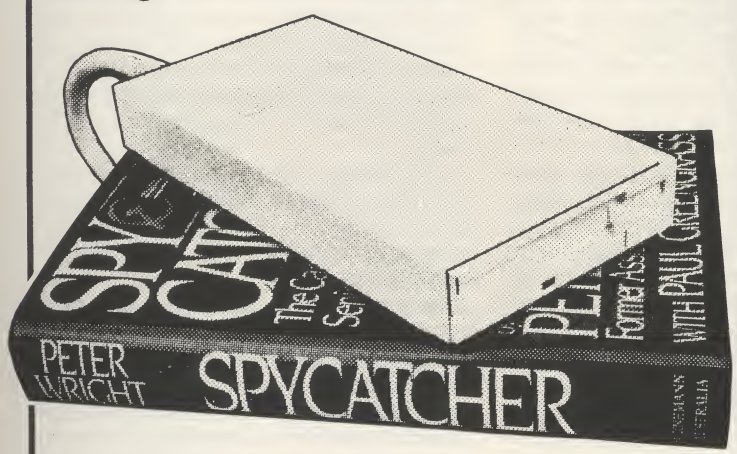
Superb quality, stylish medium resolution FST colour TV/monitor to suit the Amiga or Atari ST. Features teletext, full infra-red remote control, Euroconnector, Video/Audio input and headphone output connectors, 40 tuner presets, external aerial connector and a loop aerial. Supplied with cable (please state computer type when ordering).

SPECIAL OFFER ! £269.00

includes VAT and computer connection lead

3.5" EXTERNAL DRIVES

using Citizen drive mechanisms



- Suits Amiga 500 or Amiga 1000
- Top quality Citizen drive mechanism
- On / Off switch on rear of drive
- Throughport connector
- One megabyte unformatted capacity
- Slimline design
- Very quiet
- Long cable for location either side of computer
- Full 12 months guarantee

Ultra low price!

£79.95

inc.VAT and delivery

Cumana 5.25" External Floppy Disk Drives

(model CAS 1000 S)

We are now supplying whisper quiet slimline 5.25" floppy drives for the Amiga user from Cumana. The 'Transformer' compatible drive features an integral power supply, 40/80 track switching, 360/720K formatted storage capacity and throughport connector. It also has an on/off switch which effectively unplugs the drive from the Amiga when it is not required.

Only £159.95

Project D

disk backup utility

Only £34.95 inc.VAT/delivery

Probably the best and most complete 3.5" disk copier for the Amiga user. Can even copy MS-DOS, Atari ST, CP/M, Xenix and Archimedes disks. Because of the high specification of the Amiga drive, this copier is probably the best for the Archimedes or ST. Also includes track editor. Updates will be available in the future as and when new software protection schemes arise.

3.5" Disks

10 Bulk packed DS/DD 3.5" disks with labels, fully guaranteed	£11.95
25 bulk disks as above	£27.95
10 disks as above with plastic case	£13.95
25 disks as above, with 40 capacity lockable storage unit	£34.95
Kodak DS/DD 3.5" disks, top quality storage media. Box of 10	£17.95

How to order from Evesham Micros

VISA

Phone us with your ACCESS or VISA card details on: ☎ 0386-765500

All prices include VAT and delivery. Express Courier delivery £5.00 extra.

Send cheque, Postal Order or ACCESS/VISA card details

Govt., educ. & PLC orders welcome
Same day despatch whenever possible
All goods subject to availability, E.&O.E.
Open to callers 6 days, 9.30-5.30

Evesham Micros Ltd
63 BRIDGE STREET
EVESHAM
WORCS WR11 4SF
✆ 0386-765500
fax 0386-765354
telex 333294

Also at: 1762 Pershore Rd., Cotteridge, Birmingham B30 3BH Tel: 021 458 4564

FutureSound 500

Stereo samplers range in price from the very affordable to the very expensive – but does a high price tag necessarily mean high quality? Stuart Williams reviews one product that may make you whistle a happy tune (and digitise it!) all the way to the bank...

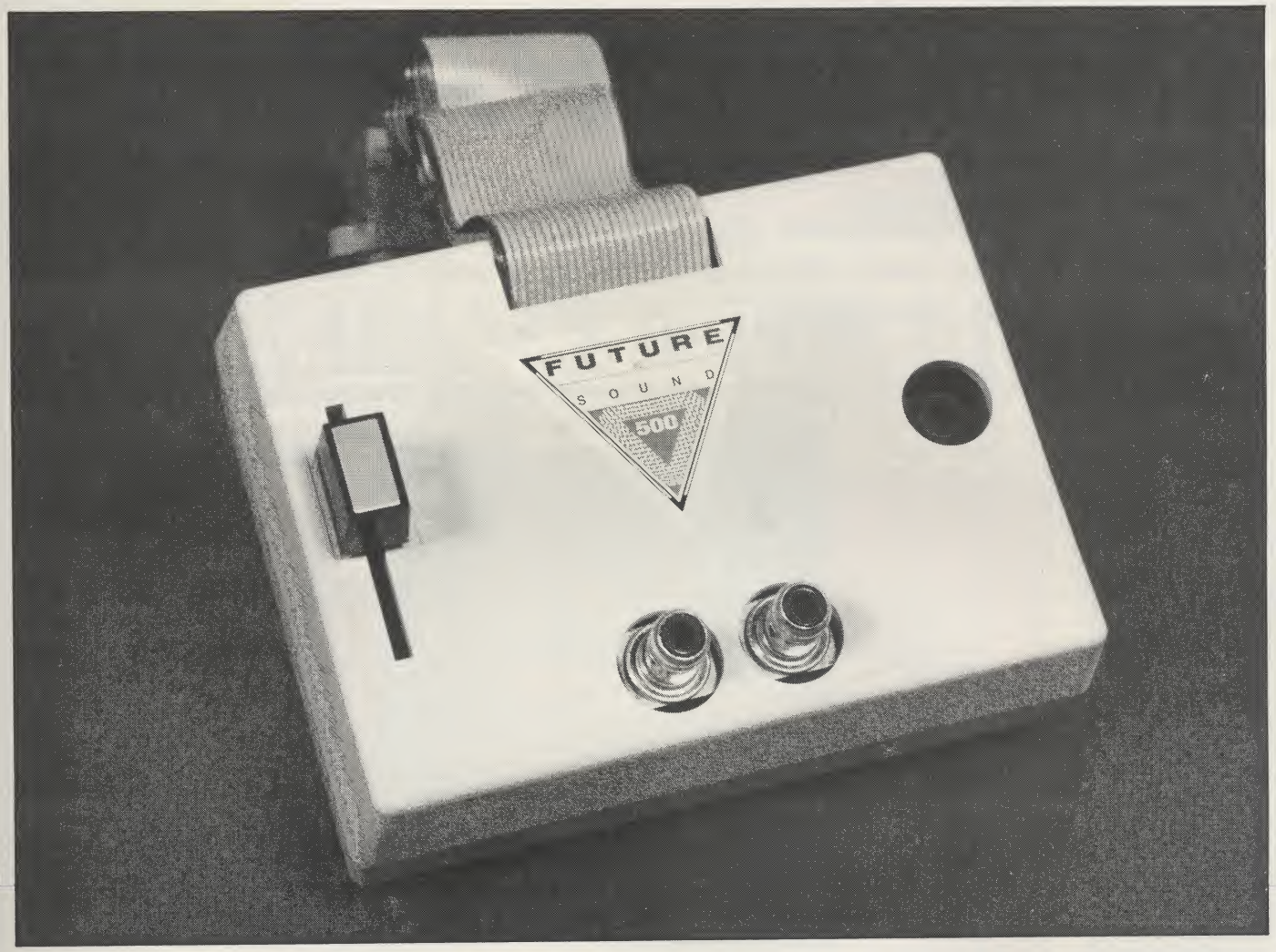
One of the greatest assets of the Amiga has always been its superb sound capabilities. Yet, powerful as the Amiga's four channel synthesiser is, it's useful to be able to supplement the onboard sound with 'digitised' or 'sampled' sounds from outside. Makers of both games and demos have latched onto the various examples of Amiga sampling hardware with enthusiasm, but balancing quality of sampling against price can be difficult. A high price is not always a guarantee of the ultimate in quality sampling - likewise, the cheapest samplers do not necessarily give poor results.

"The manual contains tips on accessing the samples from C, and a full set of routines for using the samples from Amiga BASIC are supplied on the disk. Full marks for that!"

Fortunately, it is now possible to buy a quality sound sampling unit at a new, lower price. The FutureSound 500 was until recently on sale at £175.00. Now, less wealthy Amiga users can take advantage of its abilities for £79.95 - a saving of nearly £100! While it has to be said that there are still cheaper samplers on the market, they are generally mono; the FutureSound 500 samples in stereo, and as we'll see, comes with some very useful software.

Made in the U.S.A., the sampler comes well packed, complete with a comprehensive manual and a disk of software. The FutureSound itself is solidly built from cream-coloured ABS type plastic, complete with little rubber feet to stop it sliding around your desk. Unlike some budget samplers, which use a simple screw arrangement, the sampler has an audio slider control to adjust the level of incoming sounds - this is a fine adjustment, so don't expect to put fifty watts in and get good results! There are two RCA-type phono sockets on the top of the case, marked L and R - these are the stereo line inputs which can be run from tape deck, record player or indeed any amplified sound source. Opposite the slider control is a 3.5mm (1/8 inch) standard mono jack socket. This is set up as a low impedance microphone input. This is a feature missing from many budget samplers, and ideal if you want to sample voice directly for best quality. The final connection is a 25 way male D plug at the end of about a foot of ribbon cable, which is designed to plug into the Amiga's parallel port. Owners of the Amiga 1000 (me included!) should note that they will need a gender changer to fit the unit to their machine, as the port configuration is different. This can be supplied (at extra cost!) or made up simply from standard parts.

At the heart of the FutureSound 500 is the TI548, a high speed analogue to digital converter chip. This device takes a rapid series of 'snap shots' of the sound wave as it comes in. It then sends each snap shot, which is consists of an 8-bit number in the range -127 to +127, into the Amiga at a rate controlled by the software. The Amiga's sound system uses digital to analogue converters that can take this stream of numbers and convert them back into the original sound. The sampling rate directly affects the quality of the sound recorded; the more samples taken per second, the better the resolution of the sound. FutureSound is capable of recording at a rate of 42,118 samples per second (almost 42khz, close to the Compact Disk rate of 44Khz) in mono, but the Amiga's output is limited to a rate of 28,000 samples per second. This makes the highest rates 'oversampling' modes, useful for obtaining the best quality sounds. Unfortunately, even at 28,000 samples per second, your memory will soon run out, so memory expansion will



be necessary if you envisage long samples! In practice, you should set the sample rate according to the type of sound to be recorded; speech and non-hifi sound can be adequately reproduced at 10Khz, and this will be sufficient for most purposes. If you're really fussy, however, the higher sampling rates can give quite remarkable reproduction.

The control software is very good. As you can see from the diagram of the Main Screen, all options are simply selected and adjustments made by clicking on gadgets with the mouse. Unusually, there are four tracks into which sounds may be sampled and played back. Each track is individually adjustable and the playback rates and individual volume levels can be altered at will. The sampling rate is controlled by a gadget at the bottom right of the screen, and an indication given of record time available for the amount of memory allocated (the memory free for use is also shown at the top of the screen). Unlike some other samplers, where controls for choice of stereo or mono, switching between LINE or MIC sockets, and display of recording level (in this case, with a 'VU' meter style display) are part of the hardware, all this is controlled in software from this main screen; this means all relevant controls are to hand in the one place, which is very convenient.

Sound can be stored either in Chip (main) RAM or in Fast (expansion) RAM, if long samples are required. This option is also switchable from the Main Screen. It is also possible to switch out the low pass audio filter in the Amiga 500 and 2000 from here, which can be useful with some sounds where high frequency response is important. The program also provides an oscilloscope type display of the sound being sampled, which not only moves with the sound input while switched to monitor, but displays the structure of the sound once it is sampled. This makes it easy to select an area of the sample for editing, using the mouse. It is also possible to reverse a sample or a section of a sample, copy all or part of it to another track, and mix samples together. In addition, sections of a sample may be silenced, and sections may be made louder or softer.

Samples can be saved either in FutureSound format, or in IFF format for use in other programs; this is particularly useful if you wish to create instruments for music programs such as Sonix or Deluxe Music. The manual contains tips on accessing the samples from C, and a full set of routines for using the samples from Amiga BASIC are supplied on the disk. Full marks for this!

FutureSound 500 is a well-constructed unit with sophisticated software. The only addition I would like to see is a parallel port switch box, as like most other units which use this port, it is a real pain having to remove the unit to do any printing! However, this is common among other samplers, so don't let it put you off purchasing this one. Quality of sound is high, and options for manipulation of samples comprehensive. The supplied routines for use of samples from BASIC and C are an excellent idea, and much appreciated. There are cheaper samplers on the market, but the FutureSound 500 at its new price of £79.95 represents serious competition both to the high and low end systems, and excellent value for a quality stereo sampler. I would consider purchase of the FutureSound 500 to be money well spent.

S.W.

Contact: Applied Visions (U.K.) Ltd., Jersey Supreme Works, 538/546 Whippendale Road, Watford, Herts WD1 1QN. Tel: 0923 818078

And it should also be available from all good Amiga stockists.

ICON PAINT

Mark Smiddy checks out the Technicolor desktop and discovers there is more to icons than meets the pointer...

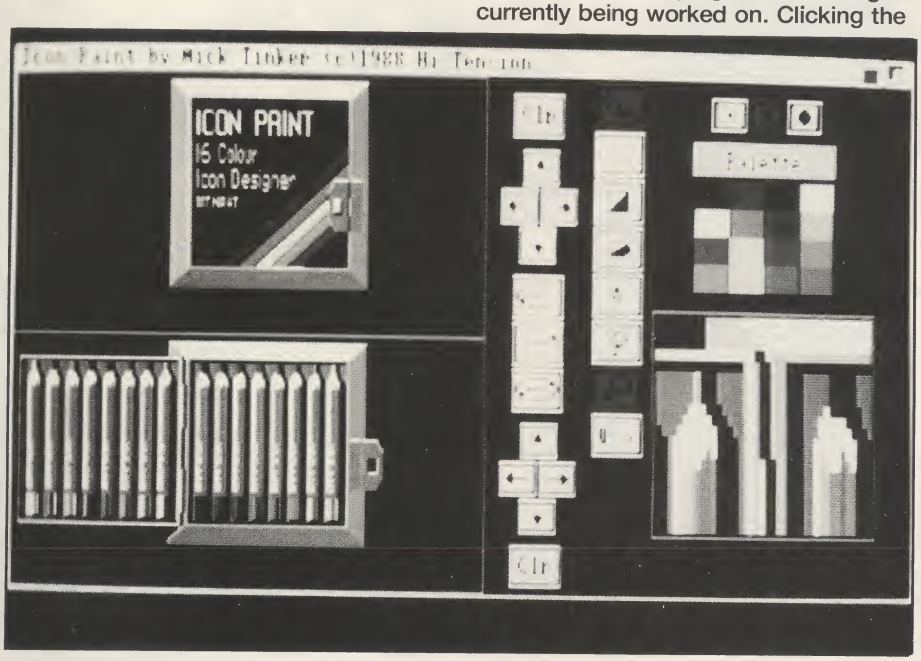
You have the rest of this sentence to work out the following: the Macintosh has a monochrome one, the Amiga has a 4-colour one and the ST has a gaudy 16-colour one – what is it? The answer is – a WIMP desktop. I suspect by now many of you are wondering if my sensibilities are still in order. Well they were last time I looked, but that is a different story. Believe it or not though, the ST really does have a 16-colour desktop, even though GEM makes no use of it. The Amiga on the other hand can – with the aid of this super little package from Hi-Tension.

Icon Paint is a complete utility package to transform Workbench from the drab 4-colour display to a beautiful 16-colour masterpiece. Of course, a 16-colour desktop would be of very little use without 16-colour icons and by definition that is exactly what Icon Paint can be used to create. In fact, it can create almost any icon, in any number of colours from a selection of 2, 4, 8 or 16. The editor is supplied on a single disk with a simple, 20 page manual and a lot of full colour example icons.

The main program on the disk is the Icon Paint editor. This takes the form of a simple drawing package but is specifically tailored to producing icon images. Previously it has been necessary to create icons using paint packages such as Deluxe Paint and to use the Iconmerge utility to create the completed icon. With Icon Paint, none of this is required since both the icon and its alternate image are displayed at all times.

When the program is run, it presents a simple, uncluttered screen consisting of; two icon boxes – the drawing areas, a magnify window, and a set of tool icons. From the project menu, there is an option to load an IFF brush in to either area or load an existing icon image to modify it. Selecting LOAD brings up the familiar load requester, although somewhat strangely this displays all files and directories rather than just .INFO files as you might expect.

Once an icon is loaded it can be edited and re-saved under the same or different name. Loading an icon configures Icon Paint automatically with the correct icon type and number of colours, although it is possible to change the normal Workbench icons to use more or less colours. In addition, it is possible to specify the type of icon; Disk, Drawer, Project, Tool or Garbage. This ensures Workbench will respond correctly when displayed.



"Various tools are available – including outlined and filled ellipses and boxes, freehand drawing, rubber-banding and three different brushes."

Drawing icons from scratch is simple – even if you do not have an art package – thanks to the facilities built in to the editor. Various tools are available – including outlined and filled ellipses and boxes, freehand drawing, rubber-banding and three different brushes. There is even a rudimentary magnify feature for adding fine details to your creations – most of the other features like ellipse drawing work here too. Surprisingly, area filling is very, very slow. Finally, just in case you make a mistake, there is the undo feature.

There are features of Icon Paint which could be improved. For instance, three icons determine operations for copying and swapping the icon images currently being worked on. Clicking the wrong one can result in one of the icons being completely destroyed with UNDO being the only chance of rescue. It is all too easy to mis-click and destroy the image beyond recovery.

In the end, do you really want a Technicoloured desktop? If the answer is yes then Icon Paint very definitely has the answer and performs the job very well indeed – at the expense of a lot of disk space and some speed, although this is a feature of the Amiga. The main advantage of Icon Paint is the ability to put your creations easily onto your own disks, thus adding the professional touch to your work. The whole package is simple to use and offers very good value for money. So much so, I expect to be seeing a lot more 16-colour desktops in future. Highly recommended.

Plus points: *Good value, can load IFF brushes, possible to create and edit very large icons, easy to use.*

Minus points: *16-colour Workbench and large icons devour memory, slows floppy disk access, no "grid lock" feature.* ***M. S.***

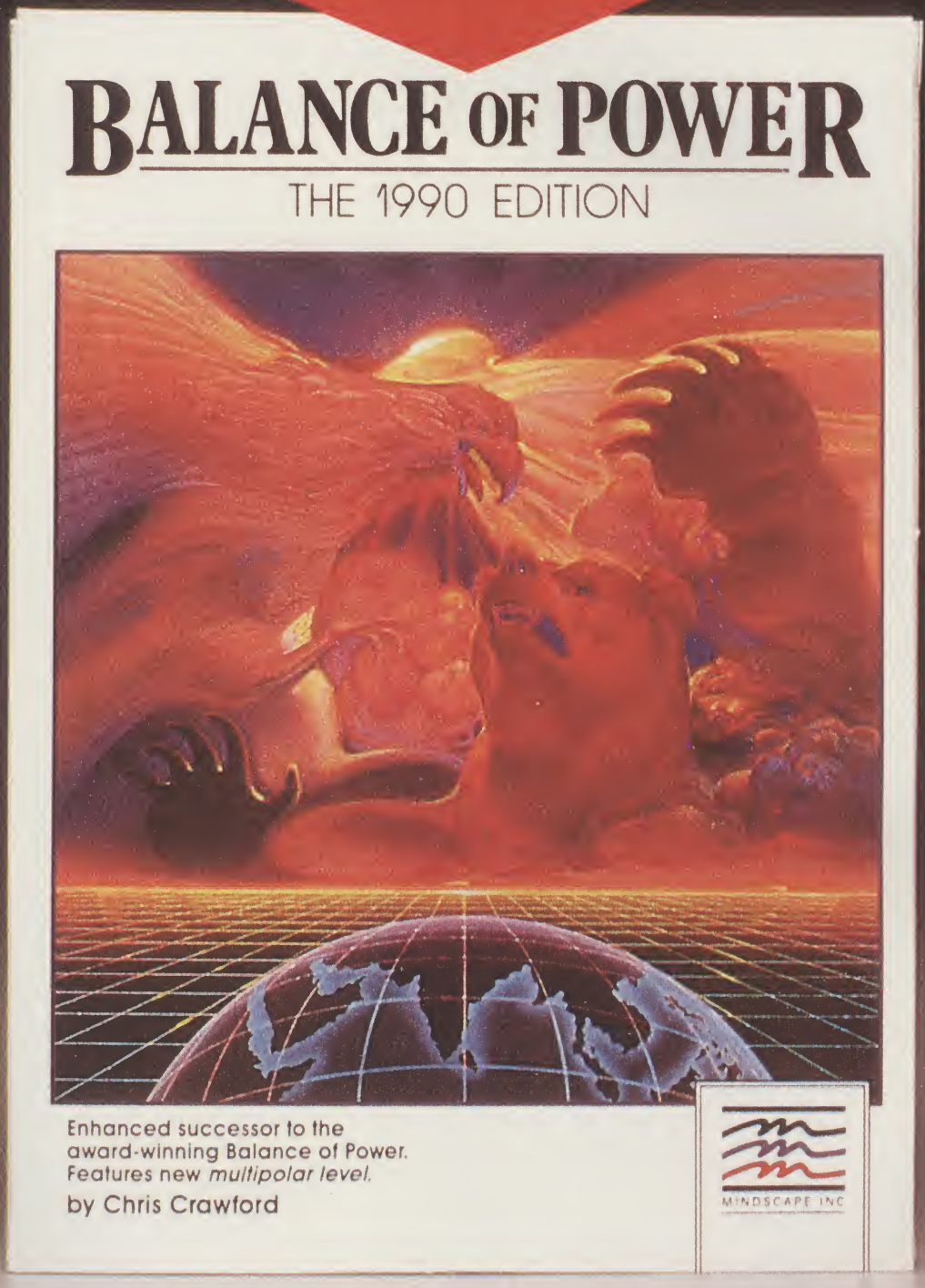
Price: £17.95

Contact: Hi-Tension Computer Services, Alexander House, Station Road, Aldershot, Hampshire, GU11 1BQ. Tel.0252 344454.

ABOUT TIME!
WAIT TILL YOU EXPERIENCE...

BALANCE OF POWER

THE 1990 EDITION



★ The ultimate simulation of global leadership in a nuclear age.

★ Assume the role of either the President of the USA or the General Secretary of the USSR.

★ An unparalleled real world simulation. Simulates real world political interaction among 80 countries (formerly 62).

★ All up-to-date information. The real world as it is in 1989.

★ 4 levels of play include the new Multipolar level. Challenging for beginners and experts alike.

★ "Crisis Advisory Group" feature and much much more!

Available for Amiga · Atari ST · PC · Apple IIGS · and Macintosh.

MINDSCAPE INC

M I N D S C A P E

For further information on Mindscape Products and your local dealer contact
Mindscape International Limited, PO Box 1019, Lewes, East Sussex BN8 4DW

Video E

Most people tend to take computer-generated special effects for granted these days. Spoilt by the sophistication of pulsing, spinning images tumbling into the living room each day, they take such things for granted.

Be prepared to shatter your preconceptions about video animation as Peter Lee takes a new pro. utility for a spin, tumble and flip.

This makes it all the harder for cottage industry video FX designers or home enthusiasts to maintain standards and keep up with the increasing attention-grabbing complexity expected by people.

The Amiga has always been at the cutting edge of video effects for the home user, but it has taken the release of Video Effects 3D from InnoVision Technology to bring it bang up to date. The program's scope is really quite small, but what is does, it does with class, and it has a front-end editing system which is both intuitive and well-designed.

rent disks, and played as if they were one effect.

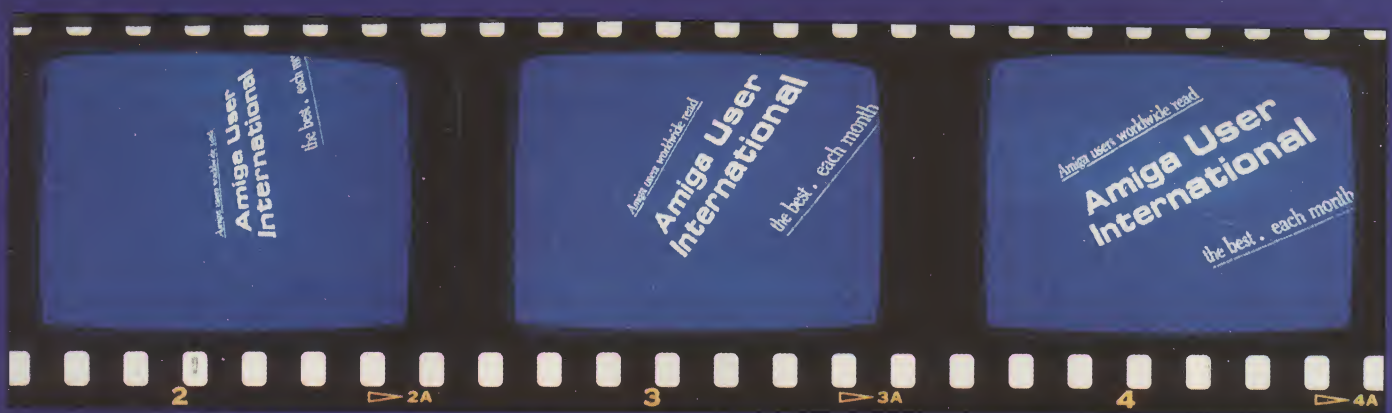
"The fewer the colours, the faster the animation will be, though even with the maximum of eight colours allowed, I found the results to be even better than I had hoped for."

limitations – sometimes a 75% reduction in speed can be expected. The answer is either to use fewer colours, or add a further 512K of fast RAM.

Video Effects 3D is a manipulation tool and as such cannot create its own images. These will typically be drawn in DPaint or a similar art package and imported.

Text plays a vital role in most video effects, and it is unfortunate that the program does not have any font styles of its own to call on. The manual recommends Zuma's TV*TEXT as a good text generator; after all, in high res the standard Workbench fonts as used by Dpaint are grossly inadequate.

The alternative is to load 3rd party fonts into your art utility; there are a number of public domain fonts available, together with several commercial varieties, the two most common being Zuma's own, and Earthbound. You



Video Effects 3D is one of the latest breed of animation programs which computes movement of an object, draws it on screen then compacts it and saves it to disk as a serial file of hundreds of images to be cycled through. The real beauty here, though, is that screen design is in three dimensions. Each frame of a sequence – and there can be 50 a second – is rendered (drawn) in this way, and played back in realtime bursts. In effect, thanks to some phenomenal crunching of images, you can cram enough screens on one 880K disk for anything from 5 to 20 seconds of animation. When you consider that the image data may well have been compacted from 40 megabytes, this is truly amazing. And you would be surprised just how short an effect needs to be; 10 seconds is a long time in video titling. But if you need longer displays, the good news is that several sequences can be loaded in from diffe-

The program comes on an unprotected disk, accompanied by a stunning demo disk and a large ringbound manual. It works in the full overscan PAL display mode – which creates first class dumps to videotape – but uses only high resolution IFF images – the type you can create in most art packages. The fewer the colours, the faster the animation will be, though even with the maximum of eight colours allowed, I found the results to be even better than I had hoped for.

The program is designed to run on any Amiga system with a minimum of 1.5 megabyte of RAM, though the longer sequences will need at least 2 megs.

A warning here for A500 owners; the use of a 512K A501 memory expansion module will allow the program to run OK, but once high res screens of 8 colours are being used, performance becomes sluggish due to hardware

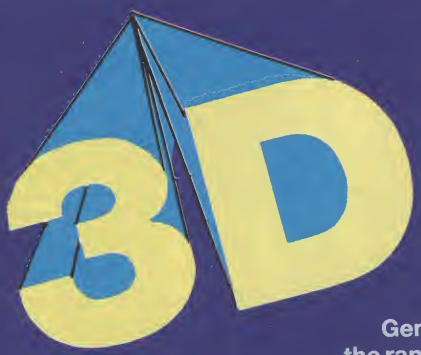
really need a font with a size of at least 30 points to make any impact, and the largest Zuma fonts seem purpose-made for the job, though they are expensive.

The first thing which strikes you on launching into the program from its CLI screen is the superbly designed menu control method. Controls look professional and can all be accessed through the mouse. And while ever a menu is on screen, help information is constantly being displayed regarding every aspect of its features.

Images loaded in can be fully rotated around 3 axis and motion controlled, with zoom, flip, rotate, tumble turn and spin all available to make the finished effect as complex and eccentric as you could want.

The scripts which drive a production are created using a sophisticated control panel within the editor, which displays a miniature of your IFF image

Effects



initially and then gives a wire-frame representation for subsequent manipulation. But at any time you can get a quick precis of how an animation frame will look.

Making the image spin and tumble is only a matter of altering a few values, and movement in 2D or 3D is created simply by specifying a couple of key frames, with the computer working out the in betweens.

Although smoothest animation consists of 50 frames a second, you can halve the time it takes to draw a sequence by opting for 25 frames per second. There is the opportunity, too, to have a quicker test of your effect by rendering just 8 frames/sec. This is too jerky for serious application, but quite good enough to ensure the playback is exactly as you imagined.

"A whole screen of text which I shattered into four pieces, each spinning independently off screen, took two and a half hours to render at 50 frames/second. But don't begrudge it: the results are well worth it."

And when you consider it could take 3 hours to render at 50 frames, and 30 minutes at 8, you begin to see the advantages.

Generally, depending of course on the range of movement, number of colours and effects generated, you can expect results in a matter of hours. For instance a whole screen of text which I shattered into four pieces, each spinning independently off screen, took two and a half hours to render at 50 frames/second. But don't begrudge it: the results are well worth it.

Scripts can be edited at any time, and are kept on separate disks from your animations – but be prepared to eat through a whole batch of disks as you build up your animation library. An excellent feature is the ability to write a script and then use it repeatedly on different images. So the shatter script could be made to operate on any screen I chose after a simple two-minute editing job. Clearly the rendering process will have to be gone through again for the new image, but the hard grey-matter work has already been done.

Individual frames can be saved as IFF images, and the palette can be amended from within the editor, and in some instances the program itself will modify it to achieve a particular effect: colour 0 is the genlock background colour, while colour 3 is used as the colour for the creation of automatic shadows if you have selected that option.

This is a novel and effective addition to the program's repertoire, allowing your image to cast a realistic shadow on the background as it moves about space. Video Effects makes colour three 25% darker than the background for this purpose.

Logos (or text for that matter) can be extruded into real 3D shapes, with a 'depth' of 25 pixels. One colour extrusion is the simplest but the smoothest and most effective employs 4 colours and uses solid modelling and hidden surface removal. There is a limit to the size and complexity of this feature, and users are advised to keep their image at around a quarter of the total screen area.

The program also contains several on and off wipe transitions, so that you could have a football rolling along, uncovering a scoreline as it moves from right to left. Again, these effects are easily specified from the editor.

Playing your effects requires exiting the editor program and returning to the CLI, where you must run the display program. This allows a straightforward run–through of your scripts, or series of scripts, or a presentation of the animation with the mouse button acting as a pause toggle. This is most useful for halting the effect while recording onto videotape to make a certain frame linger longer.

But it is a sad omission that you cannot have the player program boot up a particular script; you simply have to go through the procedure of loading in files and then playing them.

The manual contains plenty of examples, but is sadly lacking in either a reference section or index. There is also a RAMtest utility on the disk to ensure your expansion RAM is functioning correctly – apparently some expansion chips can be bad without you knowing it, and the Workbench information about bytes free is only what is anticipated, not what actually is on-board.

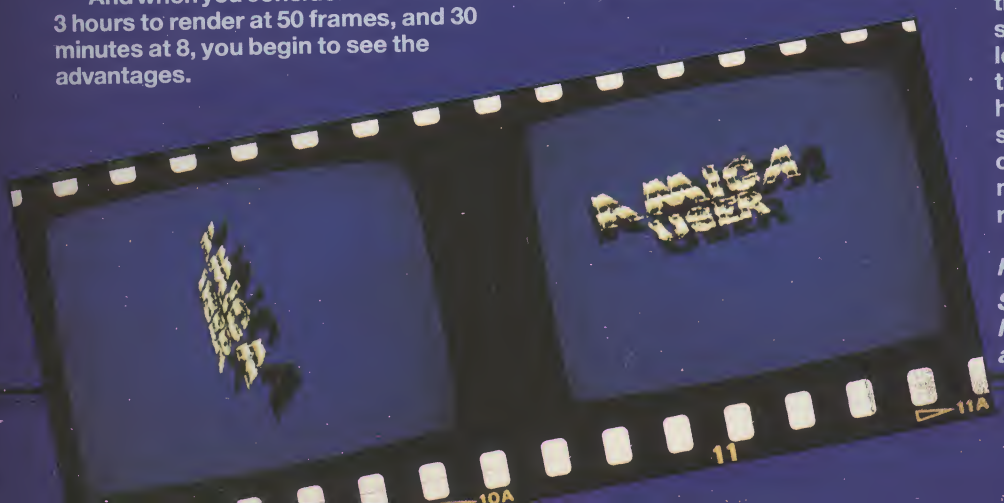
Conclusion

Although aimed directly at the professional market, this is a home animator's dream. The simplicity of a control system which is totally mouse driven hides the gateway to some of the keenest effects you could hope for on an Amiga. The program's scope is not that vast, but its potential is tremendous. Its main use will clearly be in video recordings or TV presentations – there is no facility for using completed sequences in your own programs or for lengthy self-booting demos. Also on the minus side, the process is disk-hungry and slow. Trade these against some of the smoothest, most eye-catching effects this side of a mainframe, and it is all worth it. Unreservedly recommended for the pro. titler.

P.L.

Price: £159.00

Supplier: Digipro Ltd, Enterprise House, Howard's Grove, Southampton, S01 5PR. Tel.0703 703030 .



LAN COMPUTER SYSTEMS

Show Room open Mon to Sat 10.30 am to 5.30 pm Telephone 01-597 8851

PACK 1
Winter Games, Out Run, Final Assault, Wizard Warz, Leader Board, Birdie Golf, Marble Madness
£39.00

A500 COMPUTER
+ Introduction to the Amiga manual
+ Amiga Basic Manual + Mouse Controller + The Very First Disk
+ Work-Bench Disk + Extras Disk
All for £299 + VAT
You must buy one or more packs with your Amiga

PACK 5
HellBent, Quadrallian, Star Goose, Back Lash, Attack, Better Dead than Alien, International Soccer, Winter Olympiad, Out Run, Marble Madness
£45.00

PACK 4
20 3.5" Disks
3.5" Cleaning Disk
Joystick, Dust Cover, Mouse Mat
£49.00

PACK 2
Amegas, Art of Chess, Barbarian, Insanity Fight, Ikari Warriors, Buggy Boy, Mercenary, Terrorpods, Thundercats, Wizball, Marble Madness
£39.00

PACK 3
Grid Start, Eco, Karting Grand Prix, Wizball, Thai Boxing, Terrorpods, Flightpath 737, Barbarian, XR35, Obliterator, Las Vegas, Marble Madness
£59.00

Cumana 3.5" Disk Drive with on/off switch £86	TV Modulator £21	8Mb Ram Board ..... Phone
A501 Ram £120	Genlocks ..... From £99	XT Bridge Board £299
20Mb Hard Disk £599	Amiga 500 Inc TV Mod £320	20 Mb Hard Disk £199
	A2000 Computer £849	

A LARGE RANGE OF SOFTWARE AND HARDWARE IN STOCK

PRINTERS

Panasonic KXP 1081	£145.00
Star LC10	£169.00
Star LC10 Colour	£215.00
Star LC10 Sheet Feeder	£55.00
NEC P2200	£279.00
Epson LX800	£169.00
Star LC 24/10	£279.00
Star LC 24/10 Sheet Feeder	£55.00
Okimate 20 Colour Printer	£120.00
NEC P6+	£469.00
NEC P7+	Phone
Citizen 120D	£129.00

Large range of alternative printers available. Please phone for quotation. All printers exclusive of VAT

MONITORS

Special Offer Colour Monitor	£189.00
Philips 8833	£219.00
Philips 8852	£259.00
Philips 9073	£369.00
Philips Monitor Green	£69.00
Philips Monitor Amber	£79.00
NEC Multisync II	£469.00
Commodore 1084S	£239.00
Ferguson TV/Monitor 14"	**£189.00**
Philips 14" R/C Tele-Text	**£217.00**
Philips 15" FST	**£189.00**

All monitors complete with computer leads

ACCESSORIES

Mouse Mat	£4.95
Dust Cover – Computer	£7.95
Dust Cover – Monitor	£9.95
Dust Cover – Disk Drive	£5.95
3.5" Disks (box 10)	£14.95
5.25" Disks (box 10)	£9.95
Disk Boxes from	£2.00
Copy Stand A4	£19.95
Data Switch 2way	£29.95
Data Switch 4way	£39.95
Joysticks from	£7.00
Monitor Stands	£7.00
Printer Paper from	£9.95
Printer Ribbons from	£3.00

All accessories inclusive of VAT

LANSOFT CLUB LANSOFT CLUB

The computer club for Amiga and ST users everywhere, all prices include VAT.

Membership £20 per year

So what do you get?	RRP	Lansoft
Tau Ceti	£24.95	£7.00
Hacker II	£24.95	£5.00
Gold Runner	£24.95	£5.00

So you can save up to 80% off your software on our special club promotion

HOW TO ORDER

Enclose letter with cheque, postal order or credit card number for amount including VAT and delivery charge. Credit card holders may order by telephone contact sales desk. Despatch normally within 24hrs.

Official orders from Educational Establishments, Local Authorities and Government Departments welcome. Contact Education Dept. Prices subject to change without notice. E&OE.

EXPORT HOTLINE 01-597 8854 TELEX: 995548 Fax: 01-590 6057

Dealer and export enquiries: Contact Trade Dept.

All Software and Books include VAT and Delivery

All Hardware Systems £10.00 Courier Service

Prices exclusive of VAT Unless otherwise stated and Correct at time of going to press.

Educational callers ask for Tony Judge

Come in and see us at **1063 High Road, Chadwell Heath, Romford Essex.** Just around the corner to Chadwell Heath station or easy parking in Manstead Gardens, just opposite, or PHONE 01-597 8851 show room open Mon to Sat 10.30 am to 5.30 pm

MIDI Part V

MIDI Data and the Serial Port

Once the Amiga's serial port has been set up to handle MIDI data (and we looked at how to that last month) it is quite a simple matter to actually get the device to receive and send MIDI data. The serial device uses a set of standard requests for all its I/O operations. In effect your program sends requests to the serial device 'asking' it to perform certain operations for you.

The most important of the commands, at least as far as the present discussion goes, are those which enable you to actually read and write MIDI data.

The 'read' request must know where to put the data – so your program has to have an area of memory (i.e. a 'buffer') available for this purpose. The serial request block needs a pointer to this buffer and if, for example, you wanted to allocate a 1K buffer for your program you'd use this type of arrangement.....

```
char buffer[1024]; /* allocate buffer */
SerReq->IOSer.io_Data = &buffer[0];
/* request block pointer */
```

Alternatively you could allocate the necessary space dynamically using a call to the AllocMem() routine.

To read data from the serial port you make a 'request' to the serial device asking that it reads a certain amount of data. It's done using the serial device specific I/O request and this uses the IOExtSer request block structure that we looked at last month. The amount of data to be collected is specified by setting the IOSer.io-Length field in the request structure. To collect one byte for example you'd set the field like this.....

```
SerReq->IOSer.io_Length=1;
```

To collect 1K (1024 bytes) of data you'd use.....

```
SerReq->IOSer.io_Length=1024;
```

The request block also contains a 'command field'. To read data you must set this field to CMD-READ like this.....

```
SerReq->IOSer.io_Command = CMD_READ;
```

The request block now contains all of the information needed by the serial device. There are several options for getting the serial device to carry out the request but the easiest of these, and the one recommended as a starting point, is synchronous transfer. It's done using the DoIO() function which takes the address of your extended IO block as a parameter like this.....

```
DoIO(SerReq);
```

With this type of request the program will be put to sleep until the request is satisfied or until the serial device detects an error condition. Another reason for the serial device terminating early is that, if it is operating in EOF mode, it may have recognized one of the 'end of file' conditions specified in the io_TermArray field of the IOExtSer structure. This situation is found when SYSTEX (system exclusive) data is being handled because you would set the term array data to F7 hex,i.e. MIDI EOX (end of system exclusive) in order to detect the end of the SYSTEX message.

If we collect the previous code fragments together we get a typical example of the code needed to perform a synchronous serial device request.....

```
char buffer[1024]; /* allocate buffer */
SerReq->IOSer.io_Data = &Buffer[0]; /* request block pointer */
SerReq->IOSer.io_Length=1;
SerReq->IOSer.io_Command = CMD_READ;
error = DoIO(SerReq);
```

DoIO() returns with zero if the call was successful so any non zero value indicates an error condition.

Writing to the serial device follows broadly similar pattern of operations although the command issued would be CMD-WRITE in this case. It's common practice to have separate read and write buffers and sometimes it's necessary to open the serial device twice (i.e. so that you can have totally separate reading and writing facilities available) but the advantages or otherwise of such approaches depend very much on the particular application.

P.A.O.

Susan Maxwell continues the series that makes friends of you and your Amiga.

The Amiga – An Introduction

Part III

AmigaDOS, like most other operating systems, provides several related areas of support – the disk filing system itself, the support functions which programmers use to interface directly with AmigaDOS, and the CLI terminal handling facilities. It also provides a whole host of commands which allow you to perform all of those common 'house-keeping' operations which, unfortunately, are part and parcel of most computer applications.

The AmigaDOS commands can either be typed at the terminal (using a CLI) or placed in a text file (usually called a 'batch' file or a 'script' file) for execution at a later time. AmigaDOS has it's own 'macro' language and this enables batch files to be created that allow a whole series of operations to be performed automatically. A good example of this is the execution of a startup sequence – such as that performed when you boot up from the WorkBench disk. When you 'boot up' your Amiga one of the first things which AmigaDOS does is to look for an 's' directory to see if it contains a file called 'startup-sequence'. If it does the file is executed. Such sequences usually contain quite a selection of individual commands.... some of these assign the important AmigaDOS logical directories to their corresponding physical equivalents on the WorkBench disk, others check for the presence of devices such as the ram-disk and hard disks – installing them if they are found. Various messages will also be printed and of course the WorkBench gets loaded.

You can watch all this happen as you boot up from the WorkBench disk! One of the things you will notice is that just before you see the 'icon based' display.... the original window which had been displaying the messages suddenly disappears – all that has happened is that the startup sequence closed the original CLI window just before handing over to the WorkBench environment.

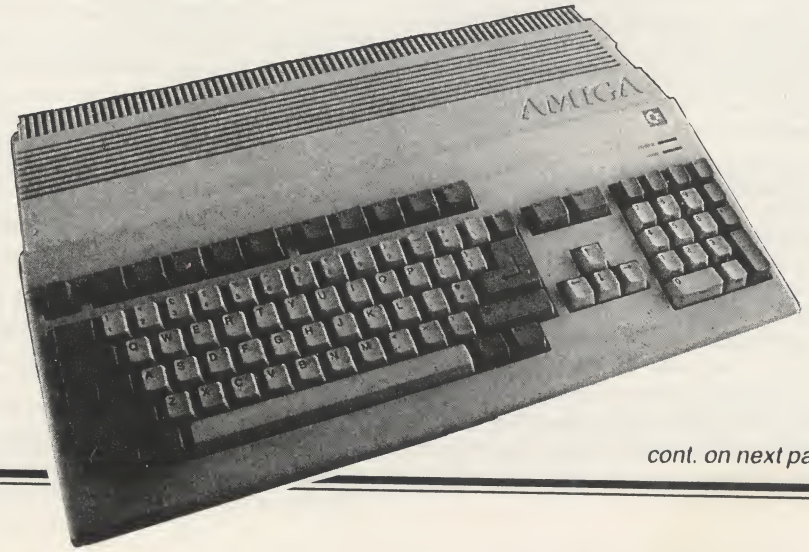
In an introductory series of this nature there is not the space to go into specific detail about individual AmigaDOS commands, but we can give you a glimpse of the type of facilities available.... you can copy, join, edit, rename and delete files with commands being made to operate on whole directories, even whole disks. The system date can be displayed or set, text files can be created, edited, printed or 'typed' to the screen and new CLI's can be created or closed. There's an EXECUTE command for performing the operations stored in the batch files and a command to let you add 'filenotes' to a file. You can format disks and collect various disk device statistics (such as free disk space), can view and change logical device assignments and set and change the current directory. AmiagDOS has quite advanced 'listing' and searching facilities and can perform a whole host of other operations – it even has a 'sort package' although this is not particularly sophisticated. One powerful feature of AmigaDOS is that it allows you to redirect progam input and output – this allows you to create files directly at the terminal or send the results of a command to a disk file. There are many other uses of I/O redirection including such things as the transfer of data to another machine via the RS232 serial port.

To give you an appreciation of the facilities offered by AmigaDOS we shall look in detail at just a couple of commands – COPY, which allows you to copy files and directories, and DELETE which lets you remove files or directories.

The syntax of the COPY command is usually given in the manuals in this form.....

COPY[[FROM]‹name›][TO‹name›][ALL][QUIET]

A bit frightening I agree, but it is not quite as bad as it looks as the following examples should show:



cont. on next page

If we wanted to copy the contents of the 'c' directory from a disk in DF0: into the RAM:c directory we'd do it like this.....

```
COPY DF0:c TO RAM:c
```

Usually the names of the files will be displayed as they are copied but this can be supressed by using the QUIET option like this.....

```
COPY DF0:c TO RAM:c QUIET
```

The ALL parameter instructs AmigaDOS to also copy files in any sub-directories which may be present. If ALL is used AmigaDOS will automatically create the required sub-directories needed in the destination directory – unless that is they already exist.

It is often a good idea to copy frequently used commands into the ram-disk like this because, for most of the time, the disk drive that you originally booted-up from then becomes free for other uses. To use commands in the RAM:c directory we do not have to change the original command directory assignment – we can simply change AmigaDOS's 'current directory' to RAM:c because the current directory is actually the first place that AmigaDOS searches when it's looking for something.

To create a RAM:c directory, copy the commands from the WorkBench disk (which we shall assume is in drive df0:), and then make RAM:c the 'current directory', takes just three AmigaDOS instructions.....

```
MAKEDIR RAM:c
COPY DF0:c TO RAM:c
CD RAM:c
```

You will now find that, when you type commands at the CLI, the disk drive light will only come on if the command in question actually needs to get data from the drive. The drive light will not come on if you type DIR RAM:, but it will if you type DIR DF0: – the commands are still being found in the RAM:c directory but in this latter case DIR itself then looks at DF0: to see which files are present. You will also notice the drive light come on if you mis-type a command (or try and perform a command that is not in the RAM:c directory). What is happening in this case is that because AmigaDOS didn't find the command in the current directory it looks in the assigned 'c' directory as an immediate 'second choice' location.

As might be expected files can be re-named as they are copied. It is easy to do, you just specify a different name for the TO file.....

```
COPY DF0:c/ED TO RAM:c/NEWNAMES/EDITOR
```

would copy the file ED, which is in the 'c' directory of DF0:, into the NEWNAMES directory of the ram-disk. The name of the new copy would be EDITOR as specified in the command line. It is worth mentioning that if we had not specified a FROM directory AmigaDOS would have looked in its current directory for the file/s we wanted to copy.

The way we have used COPY so far is nice and straightforward so it shouldn't present any difficulties. You can however do much more because COPY is one of several commands which support the use of 'patterns'. These are strings, i.e. groups of characters, which include some symbols that have special meaning to AmigaDOS as wildcards, placeholders etc. Here are the special characters in question as you see them defined in most AmigaDOS manuals.....

```
? matches ANY single character
% matches the null string (a string without any characters in it)
#‹p› matches zero or more occurences of the pattern 'p'
‹p1›‹p2› matches a sequence of pattern p1 followed by patttern p2
‹p1›|‹p2› matches if EITHER pattern p1 OR pattern p2 match
() groups patterns together
' removes the special effect of the above group of characters
```

To start with you are unlikely to use all of these but it's worth seeing how pattern based commands can be used because they are very powerful. Here's a few examples which should give you some idea of their usefulness.....

#?.BAK refers to any file which ends with .BAK

#?.BA? refers to any file which has an extension .BA followed by other letter. Note that a file TEST.BA would NOT satisfy this reference because it does not have a third character after the decimal point.

#?.BA#? this reference is a bit different – it refers to any file which has an extension .BA followed by zero or more occurences of ANY group of characters – so in this case a file TEST.BA would satisfy the reference as would TEST.BAK, SECONDTEST.BACKUP etc.

The best idea is to experiment, i.e. play around with the COPY command until you feel happy with it. If you create the ram-disk directory structure that we mentioned last month (i.e. by using MAKEDIR to create a 'c' directory, a NEWNAMES directory and an OLDNAMES directory), then copy your WorkBench disk's commands into ram as we have just explained you can try these examples.....

COPY RAM:c/E? TO RAM: – this will copy the files which represent all two character commands starting with the letter E into the ram-disk's root directory. You will only find one such file, the text editor ED.

COPY RAM:c/E#? TO RAM: – this instruction will copy every command which starts with the letter E into the root directory of the ram-disk. The ones you are likely to see copied are ENDIF, EXECUTE, ECHO, ENDCLI, ED and ELSE.

COPY RAM:?N#? to RAM:c/NEWNAMES – this is copying from the ram-disks root directory and all files whose second letter is 'N" will be copied into the NEWNAMES directory. This will include ENDIF, ENDCLI, INFO and INSTALL.

If you are a newcomer to computing all this might seem a bit too much like hard work. Do not be disheartened if some things seems horribly complicated at first, we all had just the same problems to start with. For these examples, providing your WorkBench disk (and you should be using a back-up copy of this anyway) is 'write protected', you cannot do any harm. Anything done with the ram-disk will disappear the minute you turn the machine off !

One problem you are likely to come across on an unexpanded machine, i.e. an Amiga with just the basic 512K of memory, is that you are liable to run out of memory as you experiment and duplicate files. If this happens you can delete some of the ram-disk files by using the DELETE command. The format of the DELETE command is like this....

```
DELETE ‹name› [‹name›] [ALL] [Q|QUIET]
```

ALL and QUIET have the same use as before but notice that you can use Q as an abreviation in this case. Patterns are supported as the following two examples show....

DELETE RAM:#? will clear the ram-disk's root directory for you, but it will not delete the ram:c directory because it's not empty.

DELETE RAM:#? ALL would be expected to delete every file and empty directory in the ram-disk. It does!

Many other AmigaDOS commands have similar types of options. Even DIR, which we mentioned last month, is capable of much more than we showed – you can in fact find those hidden (nested) directories by using OPT A after the device name (e.g. if you had typed DIR RAM: OPT A last month you would have seen them) and you can also use it in a special 'interactive mode' although such discussions must be left for another time.

Don't forget that AmigaDOS is multi-tasking! So, with two CLI windows open you can happily be printing a file using one CLI whilst you are performing other tasks at the other.

Next month we shall look at a few bits and pieces that you don't find in most manuals and books. We will tell you about Gurus and why they occur, and explain some things which may be of interest if you are intending to use your Amiga for business use.

S.M.

DOCUMENTATION AND DESIGN STRATEGY

Susan Maxwell

Programmers in general are more noted for their "Let's go do some coding" attitudes than for any excessive desire to document their programs. Unfortunately failure to keep adequate notes has a high price... lessons which should be learnt are not, valuable time is lost. On a bad day you may even lose track of what you are supposed to be doing.

Because the Amiga is a complex machine, a proper attitude towards keeping development notes becomes even more important. The golden rule is simple... document WHILST you are developing te program and not afterwards. By all means tidy up the notes after the program is complete but don't wait this long before you make notes at all.

It helps to develop a pseudo-standard layout for all your projects. You need notes that, in conjunction with any design diagrams, will show what the objectives of writing the program were, and explain the reasons behind your approach. You need sufficient program details to enable you at least to understand the operation of the program, and if the program is to be used by non-technical people it also helps to have some "jargon free" user instructions.

The task of producing this documentation is not quite as bad as it might seem. Even if you don't have a word processor you can use ED etc., to keep most of the documentation on diskette. Keeping notes in this fashion makes it easy to keep up to date.

Keep notes about the problems you encounter during the development. Note any assumptions you make that might affect program operation if they were changed in the future. Note also which parts of the code are Amiga specific... if you can contain these parts to specific modules then so much the better but I will be the first to admit it is easier said than done unless your program is using very straightforward CLI based I/O etc.

If the routines are small then include the documentation with the source code. If the programs are larger, then use your text editor to create separate documentation. Keep some details within the source code itself telling you where any additional documentation may be found, when the program was written etc. A simple scheme is usually all that is required and a typical source code "header" is shown in figure 1 below.

Figure 1 A typical program "header"

Program Name.....SPELL-CHECK

Project Reference .....88/ALL/1-1 Copyright (C) 1989 by Susan Maxwell

Purpose.....First phase of an Amiga spelling check program using memory based tree sort techniques. Will operate all common ASCII files.

Date.....Project start 23rd January 1989
This source 12th February 1989

Processor.....68000

Operating System .....AmigaDOS

Documentation notes .....Kept separate to source, see project ref. file.

Diskette forms.....Program and documentation are both available:

Source code	SPELL.ASM
Object code	SPELL.COM
Documentation	SPELL.DOC

In the same way that a standardized documentation layout helps to provide consistency, so does a standardized program layout. But all your programs are different? ... well yes, to a certain extent this is true, but there are many things about the overall structure that will often be similar. All will have some sort of "initial block", where EQUates or definitions are set up, structures and static storage initialised etc. Most will use various system calls which may need your own routines to pass data to the operating system in a particular way etc. Figure 2 shows a typical assembly or C language source code layout.

Figure 2: Typical source code layout.

PROGRAM HEADER

INITIALIZATION BLOCK

MAIN PROGRAM

PROGRAM SPECIFIC SUBROUTINES

GENERALIZED SUBROUTINES

SYSTEM BASED SUBROUTINES

Many routines find use over and over again. The advantages of building up a "subroutine library" is two-fold. Firstly it is not necessary to re-write the routines, they can usually be loaded directly into the source code you are writing. Secondly you will feel more comfortable using such routines because you know they have been tried and tested. It goes without saying that you should not include routines in your "library" until you are happy that tey actually do the job that they are supposed to. In practice the availability of such pre-written routines will greatly increase the speed at which your programs become operational. The Amiga has lots of system routines that you can use, your compiler or assembler will likewise often much help and don't forget the Public Domain stuff: it is written by enthusiasts for enthusiasts, it is free – and some of it is very good.

Documentation and using other peoples routines will not unfortunately, stop things from going wrong occasionally. The golden rule... "don't panic", and do not start making undocumented changes to your source code either. Errors come in various shapes and sizes and it is useful to mention some of the

continued on page 29

MIXING Business WITH LEISURE WILL BE A REAL EDUCATION

Commodore computer show

Britain's brightest event for Commodore computer users is back! And there's more to see than ever before.

This show has three main themes covering some of the major uses to which Commodore machines are put. There are over 70 key companies who will be exhibiting their latest products, which means that just about everything that's new in the Commodore world will be on show!

Novotel Exhibition Complex, Hammersmith, London W6
Friday to Sunday
June 2 to 4
10am-6pm Friday & Saturday; 10am-4pm Sunday

Business

Many companies will be demonstrating their latest software and hardware, specially designed to release the full business potential of Commodore computers.

As well as products for the C64 and Amiga series, you'll be able to try out applications for the price-beating Commodore PC compatible micros.

And you'll also be able to attend seminars covering all aspects of using Commodore micros in your business.

Leisure

The C64 and Amiga computers are the most powerful 8 and 16 bit micros for producing fast-action arcade quality games. The range of new software on show will demonstrate how these machines' power is continually being stretched, producing faster and even more addictive games with superb graphics.

If you're a keen game player, you'll find there's so much on offer at the show you're guaranteed a real treat!

Education

Commodore micros are now used as educational tools all over the country. With the development of BBC Basic on the Amiga, and the advent of Desktop Video (combining TV pictures with text and graphics), the range of educational applications is endless.

At the show you'll see how the latest software packages are making real breakthroughs in the educational sector, and be able to try them out for yourself.

Special Events

As well as special events and presentations, you'll also be able to meet some of your favourite celebrities, and maybe get a chance to talk with them about how they use micros in their work.

So for a great day out, whether you want to see what the future holds for Commodore computers, to buy the latest software or to get advice on specific applications, the Commodore show is the place to go. And if you send in the coupon today, we'll knock £1 off the price of each ticket!

● ***For the first time we are offering a family ticket for just £11 allowing entry for two adults and two children – saving up to £7 off the usual entry price!***

How To Get There
By Underground: *Hammersmith (Piccadilly, Metropolitan & District).*
By Bus: *266, 714, 716, 290, 30, 72, 74, 74.*
Car parking facilities available at the Novotel.

Advanced ticket order

Commodore computer show

POST TO: ***Commodore Show Tickets, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.***

Please supply:

☐ Adult tickets at £4 (save £1) ..... £ _____
☐ Under 16s tickets at £2.50 (save £1) ..... £ _____
☐ Family ticket at £11 (save £7) ..... £ _____
Total £ _____

☐ Cheque payable to Database Exhibitions
☐ Please debit my Access/Visa card no:

Expiry date: / /

Signed .....

Admission at door: £5 (adults), £3.50 (under 16s)

Advance ticket orders must be received by Wednesday, May 24

Name .....
Address .....
.....
.....Postcode .....

PHONE ORDERS: Ring Show Hotline: 0625 879965
PRESTEL ORDERS: KEY *89, THEN 614568383
MICROLINK/TELECOM GOLD ORDERS: 72:MAG001
Please quote credit card number and full address A640

If you want a beat 'em up done well, give the job to System 3. Their excellence in the field, has earned them a rock solid reputation with remarkably few releases, indeed Mark Cole's team make the reliable claim that every release that they have made since 1985 has hit the Chart Number One spot. IK+, the sequel to International Karate, is destined to strengthen their name further still.

Commodore veterans will no doubt be familiar with the name Archer Maclean. From his superb Defender variant Dropzone, he progressed to International Karate, a souped-up clone of Exploding Fist. Now he has moved into 16-bits, bringing the sequel with him, which for a change has grown with the times.

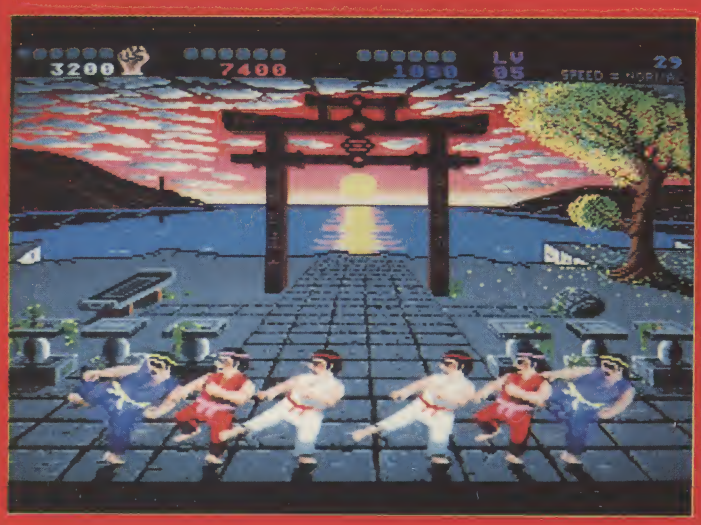
This time there are three fighters. One or two of these can be player controlled, the remainder coming under computer direction. Twelve attacking moves and a handful of defensive procedures are at your disposal. Some of these have come over intact from the first game: the face punch, shin kick and stomach kick for example, but some vicious new attacks have been added. Now you can head butt,

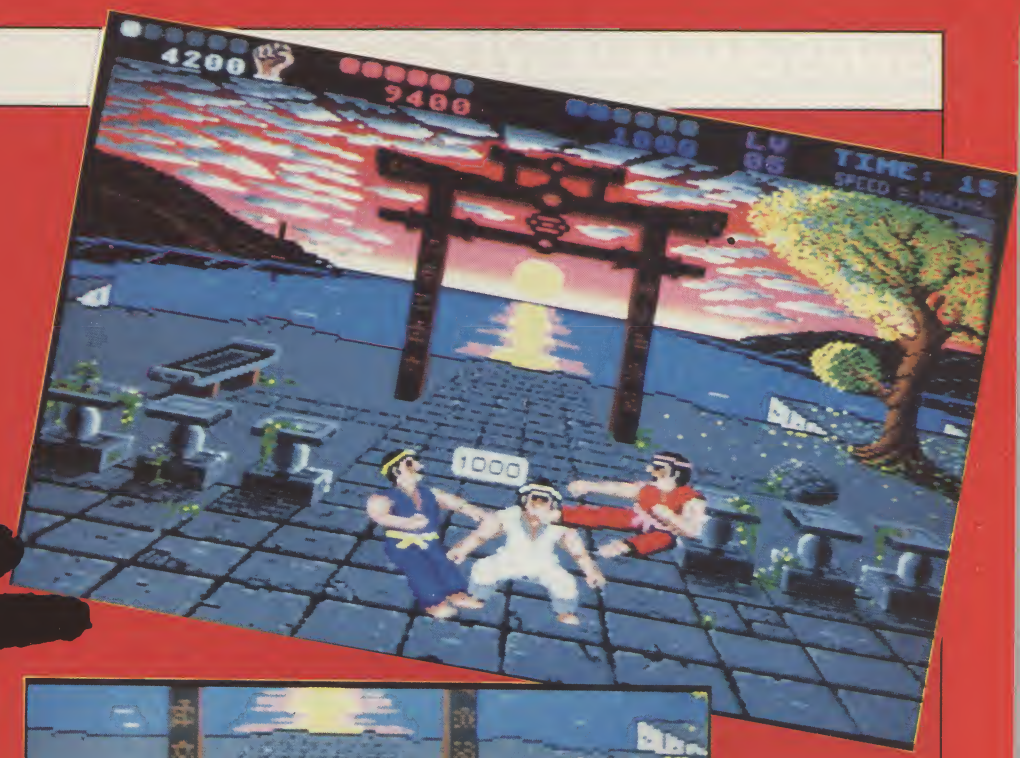
"Now you can head butt, perform a nifty reverse face kick, or go for broke and attempt to deck both fighters with the double head kick!"

perform a nifty reverse face kick, or go for broke and attempt to deck both fighters with the double head kick! The somersaults are no longer there, but instead you can use the brillantly animated back flip.

Landing a blow on an opponent puts him out cold for a few seconds and boosts your combat points. A time limit of thirty seconds is put on each bout, but usually one of the three brings it to an end before then by scoring six points. After each round the player with the least combat points goes out and the other two go through to the next bout.

Two bonus screens pop up regularly. One arms you with a small shield and throws bouncing balls and spinning heads at you. Deflect them all for a survival bonus. The other places sparking bombs at random on the ground which have to be dodged or kicked off the screen. They are both good fun, but a





bypass option would have been appreciated for when you just want a good punching session.

Rob Hubbard supplied the original IK music, and a great piece it was too. This has been remixed with crystal clear stereo samples and rates as one of the best game soundtracks around. In line with the rest of the game, the sound effects are like an OTT Bruce Lee film. Cracks, squarks, whimpers and battle-cries accompany every blow adding a savage realism to the whole thing.

IK+ is extremely detailed. The oriental sunset ripples in the distance while all kinds of creatures

"Cracks, squarks, whimpers and battle-cries accompany every blow adding a savage realism to the whole thing"

crawl around the rest of the screen. Even more impressive is the psychadelic title screen; in the centre the IK+ logo backs the credits, while around it an army of tiny men leap about in glorious technicolour. The instructions list a few combinations of keys to press for special features, and there are even more to be found if you experiment.

IK+ is everything a nose-breaking beat 'em up should be. It is vicious, spectacular, loud and great looking. Make no mistake, this is the karate game, and no Amiga owner should be without it.

T.H.

Graphics: 8
Sound: 9
Playability: 9
Value: 9
Price: £19.95

20,000 LEAGUES UNDER THE SEA

The trouble with adventures that are translated into English from another language is that, unless the job is done expertly by somebody who really understands both tongues, there is a very real risk of losing some of the sense and much of the atmosphere in the conversion. That is one of the things that appears to have gone wrong with this French import. Either that or everybody in France now talks in a very stilted and peculiar way.

This graphics adventure (with some added text, mainly dialogue) is loosely based on the famous novel by Jules Verne. The good ship Abraham Lincoln,containing Monsieur Farragut and Professor Arronax (they sound a bit like laxatives, don't they), sets sail in search of a reported sea monster. What they find – or rather, what finds them – is Captain Nemo and his famous submarine, the Nautilus.

The large-screen graphics are quite good – lots of Victorian innstruments and a neat use of browns and golds – and in keeping with the atmosphere of the original story. The basic idea is to explore the submarine, keep on the right side of the sullen Captain Nemo, learn what you can and can't do by experimentation, and plot your escape. Unfortunately sudden death or game termination seems to be the order of the day.

"Clicking on an upward winding stairway that leads to the top exterior of the sub causes instant death if the Nautilus happens to be below the surface at the time."

Playing the game consists mainly of clicking on people or objects on the screen. Clicking on people usually brings up a snatch of dialogue, much of which reads somewhat oddly no doubt due to the translation. In the main room (the lounge) of the Nautilus, you can look out of the huge, underwatere window and examine a map (used to plot a course), a compass, your log book, a couple of instruments and a diving helmet. Clicking on an upward winding stairway that leads to the top exterior of the sub causes instant death if the Nautilus happens to be below the surface at the time.

From the main room, you can also visit the engine room or the captain's quarters. Instruments (including a periscope) adorn the engine room but messing about with a couple of levers generally results in your upsetting the ever-testy captain and spending a spell locked up in your cabin.

In the captain's quarters, you can play a few notes on the organ (complete with sound effects) or browse through his many books. Again, chances are that Nemo will soon lose his cool and ask you to leave – or forcibly eject you if you don't push off voluntarily.

You may get a chance to stretch your legs

ashore or go strolling underwater in a deep-sea diver's outfit. The graphics in the island walkabout sequences, although animated, are rather poor with control of your mobile, joystick-steered character being erratic to say the least.

The game concept is an interesting one but the execution leaves a lot of room for improvement. It is all too easy to bring the game to an unsuccessful end and frustration can quickly set in. Although it has its good points, 20,000 Thousand Leagues Under The Sea is, overall, a disappointing game.

Personal rating 4

Graphics: 7
Sound: 5
Playability: 6
Value: 6
Price: £19.95

B.C.

continued from page 24

most commonly occurring ones.

Syntax errors should be by far the most common. You may mis-spell the name of a function, of mis-type an instruction mnemonic or label, e.g., CHECKWRD when you meant CHECKWORD. You may write a comment after a statement and forget to include the delimiter character which tells your assembler or compiler to ignore the comment. Doing this is a great way to upset things, because is usually results in the assembler or compiler trying to treat your "comment" as though it was a series of instructions... obviously is does not get very far before it finds things it cannot understand!

Just because your "source code" has been assembled or compiled without errors it does not necessarily mean that the program is correct. It means only that the source code has been understood. Modular approaches help a lot in reducing the 'silly error' rate and there's no doubt that this particular 'error prevention based' approach is the best policy to adopt. Try to plan out and design "small sections of code", i.e., use subroutines and function calls for as many procedures as possible. Small sections of code are easier to write, easier to examine, and more easily changed if the need arises.

The isolation, in terms of distinct functions or subroutines, has two benefits in terms of "debugging". Firstly it is usually possible to devise ways of checking particular routines one at a time. Secondly it is much easier to alter or replace a small routine than it is to untangle a small section of code from a single large section. If a program or routine does not run as expected then try to identify the area in the source code that may be causing the problems. Examine the code to ensure that the instructions written are the instructions that you intended.

Try to identify the cause of the problem BEFORE you alter the source code. Above all do not be tempted to guess! If a routine does not work then there is a fault present. You should (with practice) be able to identify that fault from the source code listing, and until then it is advisable not to make an "wild guesses", they usually simply lead to further problems.

Logical Faults: These problems are often the most disasterous. There is nothing worse than spending many hours writing routines that, once combined together, are riddled with seemingly inexplicable faults. When faults such as this occur there is no simple answer, the debugging of these types of problem often requires large sections of code to be changed (which may introduce further errors!). Quite simply, the best way to avoid the problems that logical faults create is to use techniques that enable the design of the program to be viewed during development.

Most people devise their own approach to documentation but if you want some guidelines to work to we shall leave you this month with a general scheme to get you started...

**** Identify the problem and keep written description of the project you are going to tackle.***

**** Break the problem down, using every technique that you feel will help, so that smaller more manageable areas can be identified.***

**** Include early on notes on how you expect to code those areas that appear straightforward.***

**** Ask yourself whether more complex areas may be broken down further. The answer is usually "yes". Continue the breakdown until you are happy about the coding of various sections of the project.***

**** Use your flowcharts, design diagrams and your notes as a starting point for a basic "program structure". Make lists of the routines that need to be developed, and note those that may be available from "library" sources.***

**** Work on individual routines in isolation, but keep in mind that they must be compatible with the remainder of the program.***

**** Test routines individually to ensure that they perform as they should. Complex programs can be built up "piece by piece" with any errors usually resulting from the "last routine to be added".***

PROGRAM Magic

DGCALC
"I really liked the package, and first impressions are important, Digita deserves full marks" Amiga Computing

HOME ACCOUNTS
"My overall impression of this program was one of QUALITY ... excellent value for money" Amiga User International

MAILSHOT
"Well presented. At that price it is hard to think of anyone who could not get value for money" Atari User International

SEND FOR **FREE** BROCHURE PACK

ORDER NOW - 24 HR CREDIT CARD HOTLINE 0395 270273

◆ DGCALC ◆
At last, an inexpensive and genuinely easy to use spreadsheet program. Command and menu-driven, 512 rows, 52 columns, programmable function keys, text overflow and much, much more. Simple enough for the beginner, powerful and fast enough for the professional.
A calculated best buy £39.95

◆ MAILSHOT ◆
A powerful menu-driven mailing program using a unique system for on screen scrolling of labels. This WYSIWYG (what you see is what you get) system means that any label format you define on screen will be identical when printed.
As well as powerful sorting and searching (search for anything, anywhere!), Special Routines include: detection of duplicate labels, surname sorting and many, many more. For business users, MAILSHOT PLUS is also available.
Why set your sights lower £24.95

◆ HOME ACCOUNTS ◆
Ideal for both home users and small businesses. Supports workbench and multitasking, simple to use, this complete home accounting package will cater for up to 10 income accounts (e.g., bank, credit card, HP) and 60 categories of household expenditure (e.g., mortgage, rates, food, etc.) with optional budgeting. The program will automatically handle 100 Standing Orders, etc., and allow you to produce your own statements to check bank account(s)/charges, credit cards, etc. ... Process up to 300 transactions per account per year. Comprehensive reporting facilities include: detailed statements, budget forecasts, pie and bar charts, etc.
You'll wonder how you ever managed without it! £29.95

◆ DAY-BY-DAY ◆
A comprehensive diary planner which is equally suitable for the business or at home. Includes built-in *intelligent* calendar, search/sort, printing, weekly/monthly planners, etc.
For the best laid plans £29.95

◆ E-TYPE ◆
Transform your existing computer into a fully fledged typewriter, displaying and printing text instantly. Ideal for form-filling, addressing envelopes, memos, etc. Character by character or line by line printing (with word-wrap, justification, etc.)
The emulated typewriter £39.95

DIGITA INTERNATIONAL

TOP QUALITY PROGRAMS AT MAGICAL PRICES

All software written in the UK. Prices include VAT & P&P (add £2.00 for export)

PLEASE RUSH ME BY RETURN (enter quantity)

Amiga

		PRICE
_____	DGCALC	£39.95
_____	HOME ACCOUNTS	£29.95
_____	MAILSHOT	£24.95
_____	MAILSHOT PLUS	£49.95
_____	DAY BY DAY	£29.95
_____	E-TYPE	£39.95
_____	DEMO DISC	£2.95

_____ Please send FREE Brochure Pack

Name: _____

Address: _____

Please debit my ACCESS/VISA CARD

No. _____

Expiry Date _____

Signature _____

Post to: DIGITA INTERNATIONAL LTD.
BLACK HORSE HOUSE, EXMOUTH
DEVON EX8 1JL

GEORGE THOMPSON SERVICES PRESENTS

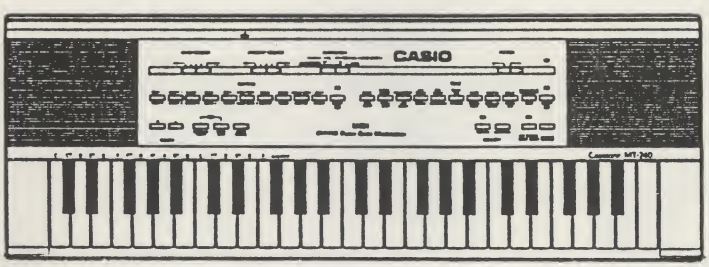
State of the Art

This standard work (400 pages) to Deluxe Paint II is here presented in its newly revised second edition. PROFESSIONAL RESULTS WITH DELUXE PAINT II joins together basic illustration techniques with the power and capabilities of the most widely acknowledged graphics programme for the Amiga. Crammed full of tips and tricks, even the beginner is shown how to produce the most beautiful pictures!
Perfect colour-cycling, drawing of cartoon characters, transfer of illustrations and photographs to the computer, water colour techniques – all this and much more is lucidly covered within the pages of PROFESSIONAL RESULTS WITH DELUXE PAINT II.
The creation of background pictures for slideshows, and their transfer to video is also demonstrated. Written by a professional, himself fully committed to the wonderful world of computer graphics, PROFESSIONAL RESULTS WITH DELUXE PAINT II opens up to the budding cartoonist the giant spectrum of the Hollywood dream factory!!
More than 200 illustrations accompany the well-written and easy-to-follow text.
From the Contents: ■ Basic Illustration Techniques ■ Portraits and Real Life Drawing ■ Formation of Characters in Two and Three Dimensions ■ Colour Cycling ■ Stenciling – The Technique of Perspective ■ Production of Slides for Advertising ■ Screen Photography and Video Transfer ■ Strip-Comic Painting Workshop ■ Video Backgrounds and the Design of Landscape ■ Hollywood-style Cartoons.
Also available 2 accompanying diskettes to the book.

This magnificent book is priced at £24.95 or with the two accompanying disks a very special price of only £29.95 inc. Special rates apply to schools, colleges and students – Details on request.

DeLuxe Paint II is a registered trade mark of Electronic Arts

A Music Extravaganza



MT 240 TONEBANK KEYBOARD WITH BUILT-IN STEREO SPEAKERS

- 4 OCTAVE, 10 POLYPHONIC, MINI-KEYS.
- 20 PRESET SOUNDS PLUS 210 SOUND 'TONEBANK' BUTTON.
- PRE-PROGRAMMED EFFECTS – STEREO DIGITAL DISPLAY, STEREO PANNING.
- 20 RHYTHMS-49 PCM RHYTHM SOUND SOURCES.
- INTRO/ENDING AND 20 FILL INS.
- CASIO CHORD AND FINGERED CHORD.
- REAL TIME MUSIC MEMORY.
- PITCH CONTROL.
- MIDI IN/OUT

£149.00 INC. PLUS A POWER SUPPLY UNIT FREE!

MIDI GOLD 500 – ONLY £49.95 INC. PLUS TWO MIDI LEADS FREE!

A COMPLETE MUSICAL INSTRUMENT DIGITAL INTERFACE FOR THE AMIGA A500. IT ALLOWS IT TO COMMUNICATE WITH THE WIDE RANGE OF MIDI COMPATIBLE SYNTHESIZERS, DRUM MACHINES ETC. FEATURES INCLUDE: MIDI IN * TWO MIDI OUTS * MIDI THRU / THIRD MIDI OUT * SERIAL PASS THRU (A TOGGLE SWITCH SELECTS EITHER MIDI OR SERIAL OPERATION) * BEAUTIFULLY ENGINEERED THE MIDI GOLD 500 IS CONSIDERED BY MANY TO BE THE "ROLLS ROYCE" OF MIDI INTERFACES.

DR.T'S MIDI RECORDING STUDIO – ONLY £42.00 INC. PLUS TWO PD INSTRUMENT DISKS FREE!

FEATURES INCLUDE: MULTITASKING * ROCK STEADY TIMING * AUTOMATED 8-TRACK TAPE RECORDER USER INTERFACE * RECORD USING KEYBOARD OR STANDARD MIDI INSTRUMENT * SUPPORTS UP TO 16 INTERNAL IFF SOUNDS * FULL EDITING OF ALL MIDI PARAMETERS AND INDIVIDUAL MIDI EVENTS * CUT, COPY, PASTE, TRANSPOSE, COMPRESS, EXPAND, AND SCALE VELOCITY; SINGLE EVENT OR GLOBAL * REAL-TIME TEMPO ADJUSTMENT * DATA FILES COMPATIBLE WITH DR.T'S KCS * AND MUCH, MUCH MORE.

SPECIAL EDITION

THE COMBINATION OF THE CASIO MT-240, DR.T'S MRS AND THE MIDI GOLD 500 MAKE A FORMIDABLE MIDI TEAM. ALL ARE TOP QUALITY BRANDED PRODUCTS THAT REPRESENT EXCELLENT VALUE FOR MONEY. WE ARE OFFERING ALL OF THESE ITEMS WITH THE LISTED ACCESSORIES FOR AN INCLUSIVE PRICE OF ONLY £229.95 INC.

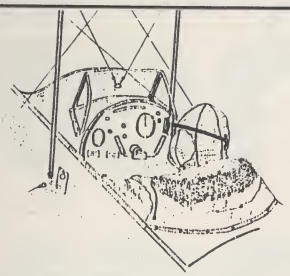
SONIX · £29.95 · SONIX · £29.95 · SONIX · £29.95 · SONIX · £29.95

G.T.S. PRESENTS THE "SONIX MUSIC PACK" AT THE UNBELIEVABLE PRICE OF ONLY £29.95 INC.
THIS AWARD WINNING PROGRAM LETS YOU CREATE YOUR OWN INSTRUMENTS, COMPOSE MUSIC AND WORK WITH MIDI INSTRUMENTS – AT PRACTICALLY HALF THE NORMAL PRICE! NOT ONLY THAT BUT WE ARE INCLUDING THE TOP THREE "SONIX TUNES" DISKS VALUED AT £9.00. THESE FEATURE MANY POPULAR MUSIC TRACKS, SONIX PLAYS AND LED FOR SWITCHING OFF THE A2000/A500 SOUND FILTERS. A VERY SPECIAL MUSIC PACK AT A VERY SPECIAL PRICE. PLEASE NOTE THAT TWO DISK DRIVES ARE REQUIRED AND THAT THIS OFFER IS LIMITED TO 50 PACKS. ACCESS ORDERS WELCOME.

THIS MONTHS MUSICAL SNIPS – DR.T'S KCS 1.6A ONLY £139.00 INC – THE TOP 18 SONIX MUSIC DISKS ONLY £19.99 INC.

WE ARE GEORGE THOMPSON SERVICES – OUR ADDRESS IS: DIPPEN, BRODICK, ARRAN, SCOTLAND KA27 8RN. PLEASE SEND YOUR CHEQUE (WITH BANK CARD NO. ETC.) P.O. OR JUST TELEPHONE YOUR ACCESS NUMBER AND WE WILL DESPATCH YOUR ORDER IMMEDIATELY. ALL OF THESE ITEMS ARE ALSO AVAILABLE FROM GTI GMBH, P.O.BOX 2067, D-6370 OBERURSEL, WEST GERMANY.

A SPRING TAKE-OFF WITH G.T.S



TRUE FLIGHT * TRUE FLIGHT * TRUE FLIGHT

TRUE-FLIGHT, THE PILOT'S JOYSTICK AND SUBLOGICS CLASSIC FLIGHT SIMULATION PROGRAM MAKE AN EXCITING TEAM. AT LAST IT'S POSSIBLE TO EXPERIENCE THE REALISM OF TAKING OFF, FLYING, LANDING AND EXPLORING THE WORLD OF FS-II. TRUE-FLIGHT HAS BEEN SPECIALLY DESIGNED FOR ARMCHAIR PILOTS LOOKING FOR THE EXCITEMENT OF FLYING A CESSNA 182, LEARJET 25G OR EVEN AS AN ACE COMBATING THE RED BARON IN THE WORLD WAR I.

WE WILL ALSO INCLUDE OUR SPECIAL "SCENARIO" DISK. THIS FEATURES: ESCAPE FROM ALCATRAZ, CENTRAL PARK ON A SUNDAY AFTERNOON, TAKE OFF FROM THE GOLDEN GATE BRIDGE AND MUCH, MUCH MORE. THE PRICE OF THIS VERY SPECIAL PACKAGE IS ONLY £54.90 INC. A SAVING OF £10.00!

JUMPDISK MARCH ISSUE

PROGRAM HIGHLIGHTS OF THIS MONTHS "BEST SELLING MAGAZINE ON A DISK" ARE :

METRO – A SOPHISTICATED SIMULATION GAME. LITTLE BLACK BOOK – SMART ADDRESS BOOK. BATCHFILES – UTILITY FOR ICONISED BATCH FILES. VIRUSX 3.1 & KV – COMBAT THE NEW IRQ VIRUS. SWEEPMEM – FREES MEMORY. PLUS MUCH MORE ARTICLES FEATURE FULL PROGRAM DOCUMENTATION, A REPORT ON THE AMIFORUM IN FLORIDA, VIRUS UPDATE, PLUS TUTORIALS, REVIEWS, NEWS, LETTERS.

LIKE TO KNOW MORE? – WHY NOT ASK FOR THE MARCH COVER FOR THE FULL PICTURE!

£19.99 MEGA PACKS

NEW! MEGA GAMES PACK – VOL 1

YES, AT LAST IT'S AVAILABLE! SEVEN DISCS PACKED FULL OF THE BEST PUBLIC DOMAIN, SHAREWARE AND OUR OWN GAMES PROGRAMS. ALL DISCS AUTOBOOT AND ALL PROGRAMS RUN ON 512K.

BATTLEMECH (ROBOT BATTLE SIMULATION), BULL RUN (RE-LIVE THE AMERICAN CIVIL-WAR STRATEGY), SUPER-BREAKOUT, GRAVATTACK (COLLECT THE KEYS ON A DISTANT PLANET)/COS (WHEEL OF FORTUNE), 3D OTHELLO, STONEAGE (ROCKFORD CLONE), Q-BERT, CRYSTAL-VISION/HACK: THE LATEST 3D VERSION OF THE FAMOUS DUNGEONS AND DRAGONS TYPE GAME/MONOPOLY (UPDATED VERSION), DELUXEBURGER, ASTEROIDS, MERCENARY SIMULATOR (SURVIVE AS A MERCENARY SOLDIER – MANY LEVELS), W/B PUZZLE/ESCAPE FROM JOVI (MANOEUVRE YOUR SPACESHIP THROUGH UNDERGROUND TUNNELS), AMOEBA INVADERS (ADDICTIVE SHOOT 'EM UP), MISSILE COMMAND, IFF2PCS/BATTLESHIP (EXCELLENT STEREO SOUNDS), DESCENDER, PACKMAN '87 (PAC'S BACK), TILES (SIMILAR TO SHANGHAI)/REVENGE OF DOOM (NOT PD OR SHAREWARE) NEW AND ORIGINAL SPACE ARCADE TYPE GAME.

NEW! CLASSIC DEMOS – VOL II

KNOWN AS THE 'ALTERNATIVE DEMO PACK', THIS COLLECTION OF EIGHT DISKS CLEARLY SHOWS THE TRUE GRAPHIC CAPABILITIES OF A TRULY OUTSTANDING COMPUTER. WATCH 'EL GATO' (THE WALKING CAT), THE RED BARON, KAHNANKAS, PROBE SEQUENCE, THE DANCING RAISON, THE SOUTH AMERICAN TREE FROG, AND MANY MORE. PLEASE NOTE THAT SOME OF THESE DEMOS REQUIRE ONE MEG OF MEMORY.

NEW! MEGA DEMO PACK – VOL II

7 DISCS PACKED WITH SOME OF THE GREATEST GRAPHIC AND SOUND DEMOS. WE'VE EVEN INCLUDED AN 'INTRO MAKER'. NOW IT'S POSSIBLE TO MAKE YOUR OWN INTRO SCREENS USING IFF SOUNDS AND PICS. MESSAGES CAN BE DISPLAYED VERTICALLY OR HORIZONTALLY.

STILL AVAILABLE! MEGA DEMO PACK – VOL I

THE ORIGINAL 7 DISKS PACK OF SPECTACULAR VISUAL AND SOUND DEMOS. THESE SHOULD SELL AN AMIGA TO ANY ATARI OWNER! TELL US WHERE YOU SAW THIS AD AND WE WILL INCLUDE A BRAND NEW MUSIC DISK FREE!

STILL AVAILABLE – THE PD STARTER PACK

THE BEST SELLING PACK NOW INCLUDES 9 DISCS! THE GOLDFISH (3 DISCS), BEST OF AMICUS (4 DISCS) AND OUR OWN DOUBLE LIBRARY DISK PACK. ALL FOR LITTLE MORE THAN THE PRICE OF 9 BLANK SONY DISCS! THERE'S NO BETTER WAY TO FIND OUT ABOUT AMIGA PD. NOW INCLUDES 3D GLASSES!

COMING SOON!

THE PUBLIC DOMAIN "HOME BUSINESS" PACK WILL BE RELEASED ON APRIL 1ST. SEVEN DISKS CONTAINING THE PICK OF THE BEST BUSINESS ORIENTATED PROGRAMS ON PD. FEATURES READY TO RUN DATABASE, SPREADSHEET, WORDPROCESSOR, SPELLCHECKER, HOME AND SMALL BUSINESS ACCOUNT/INVENTORY MANAGEMENT, APPOINTMENT SCHEDULER, ADDRESS BOOK AND MUCH MORE. FULL PROGRAM DOCUMENTATION IS INCLUDED ON EACH DISK (512K). WE WILL INCLUDE WITH THE FIRST 50 ORDERS A FREE! AMIGA "DIAGNOSTIC" PROGRAM THAT RUNS MEMORY AND DISK DRIVE TESTS.

£4.99 SPECIALS

NEW! SHAREWARE EXTRAVAGANZA – PUT TOGETHER SPECIALLY FOR JUMPDISK BY CHET SOLACE THIS DISK CONTAINS 26 PROGRAMS OF THE BEST NEW SOFTWARE SOLACE FOUND ON THE AMERICAN BULLETIN BOARDS DURING AN INTENSIVE OCTOBER FORAY. THE DISK CONTAINS ABOUT 1.5 MEG OF MATERIAL STORED IN A HIGHLY COMPRESSED SELF-BOOTING FORMAT. IT IS MENU DRIVEN AND READY TO RUN WITH 8 COLOUR ICONS. ANSI TEXT, ANIMATION AND FULL DOCUMENTATION. RECOMMENDED.

THE JUMPDISK AUTUMN SPECIAL – IS STILL AVAILABLE! FEATURES:– AMIGANT – A PROJECT MANAGEMENT SCHEDULER/ATLANTIC CITY BLACKJACK – INCLUDES MULTIPLE PLAYERS, STRATEGY, CASINO SPECIFIC RULES/ADDICON – ASSIGN ICONS TO FILES/JUMPDISK BACK ISSUES.

INTERESTED IN AMIGA PD? THEN WHY NOT CONSIDER THE PD LIBRARY PACK? TWO DISKS PACKED FULL OF INFORMATION AND ARTICLES PLUS A COPY OF OUR NEW PD NEWS CATALOGUE ALL FOR ONLY £4.99 PLUS A £5.00 VOUCHER THAT MAY BE USED AGAINST THE FIRST PURCHASE OF 10 OR MORE PD DISKS. UPDATING FREE!

STOP PRESS ... STOP PRESS ... STOP PRESS ... STOP PRESS

JUST "BEAMED" INTO US IS THE BEST PD GAME WE HAVE EVER SEEN TO DATE. "STAR TREK" FEATURES DIGITIZED PICS/SOUNDS/SPEECH, ADVENTURE AND ARCADE ACTION! THREE DISKS TO ENJOY BUT ONLY WITH 1 MEG. JUST £8.99 FOR THE SET!

ALL OF THE ABOVE ARE AVAILABLE FROM: GEORGE THOMPSON SERVICES, DIPPEN, BRODICK, SCOTLAND KA27 8RN. TEL: 077 082 234 – ACCESS ORDERS WELCOME. OTHERWISE PLEASE SEND YOUR CHEQUE OR P.O. AND WE WILL DESPATCH YOUR ORDERS BY FIRST CLASS POST IMMEDIATELY.

INFORMATION TECHNOLOGY & HOW TO USE IT

Robert Hinton

Information technology is a resource and, in today's world, one of the most important we have. It is also a growth industry with a rapidly increasing impact on practically everything we do. The term covers not just computers and word processors but any electronic device which can inform and communicate. So telex, teletext and fax machines, data, voice and image processors even telephones can be included under the 'umbrella' name of IT.

This book is not only for the computer enthusiast but, and I quote, 'anyone who feels uncertain, confused, bewildered or threatened by the subject'. And there are many who do.

It does, I think, succeed admirably. It is written in no-nonsense language not hi-tech jargon, and explains in great detail what IT is, what to look for when buying a system, how to install it, what to do when yoy have it, and how it will affect those who use it. Although primarily written for professional administrators any student of IT will find this book extremely useful.

One of the most important things when a company changes from any sort of manual system to modern IT is how employees react to that change. It's all very well for the members of the board room to agree to the installation but, unless, the rank and file have been kept informed and, yess, even consulted – although this goes against the grain with some managements, more's the pity – many of them will feel threatened by the changes taking place. Hinton lays particular stress on the importance of reducing anxiety in previous non-users of IT. Insecurity, low morale, even resentment, can and does affect individual performance and this will, eventually, be reflected in the corporate showing. If managers follow the advice given in this book no such happening will occur.

I read recently of a magazing publishing company – no, not this one! – which introduced computerisation in its non-editorial departments. The package cost £50,000 but, even as it was installed, the company bought another title, which added an extra 30,000 subscriptions to its list. They found, unfortunately for them, that their package couldn't cope. It will cost a further £10,000 to enable them to up-grade. The publisher in question now says that they realise they should have gone more deeply into the issue before they bought what was, in effect, a 'pig in poke'. It's a shame they couldn't have read this book before they laid their money on the line.

Hinton gives information and help on IT itself and they way it's used; devising, preparing, and developing a strategy before its use and the many personnel and management issues that may arise once you have it. Also included is the subject of frauds and how to avoid them. And, if you already have an IT system and are looking to up-grade or change it, then he will help you there, too, for tendering and selection procedures are detailed. There is even a sample questionnaire that could be issued to prospective suppliers.

Not sure of what hardware and/or software to choose? There are chapters on these as well as the essential security aspects necessary. For those with previous knowledge of any IT system some of what Hinton states may seem superfluous, e.g. the importance of making back-up copies of all data disks, but his book is for the novice as well as the experienced so some basic facts are necessary. (So, if you are not sure of the difference between a 'bit' and a 'byte', don't know what ASCII stands for and think RAM means a four-legged, horned, smelly animal, Hinton will put you wise).

What I liked most about Robert Hinton's book is that he puts people before machines of any kind. Enlightened management, will, of course, already be aware of this but he emphasises how important it is for personnel at all levels to be involved in the changes that are being made.

There are still some companies which install it without any prior warning to staff and others who think a couple of hours in front of a VDU will be sufficient to enable everyone to become experts. As Hinton so correctly states, 'for most people evolution is preferable to revolution, especially in matters which affect their personal sense of well-being'. At £30.00 this book is not cheap but it will be cost-effective, for it will ensure that both the employer and employees sense of well-being in relation to IT is maintained. Not to mention the savings that will be effected if it is read before any kind of installation is contemplated.

D.M.

Price: £30.00
Supplied by: ICSA Publishing Ltd., Fitzwilliam House, 32, Trumpington Street, Cambridge CB2 1QY.

Kenny Dalglish

SOCCER MANAGER

AVAILABLE NOW
Atari ST - £19.95
Amiga - £19.95

AVAILABLE MARCH 89
Spectrum - £8.95 tape £14.95 disc
Commodore 64 - £9.95 tape £12.95 disc
Amstrad - £9.95 tape
Atari 8 bit - £9.95 tape £12.95 disc

Cognito

COGNITO GAMES, 28 Osborne Road, Jesmond, Newcastle upon Tyne NE2 2AJ Tel: 091 281 4401

SUPER ON

Electric Dreams

'The best computer race game of all time?' Is Tony (Call me 'Iceberg' Baby) Horgan losing his cool?

It didn't have the impact of Outrun or Afterburner when it hit the arcades, but Sega's Super Hang On makes a perfect source for an Amiga coin-op conversion. While the other two seemed to impose great strains on the programmers and the Amiga's hardware, Electric Dreams' conversion copes with the task with apparent ease.

Four continents await you and your nitro-injected mean machine. Like Outrun, it's a race against time from one stage to the next. Unlike Outrun there are no forks. Instead you choose your route from a stylised map of the world, where four continents offer races of varying length and difficulty. Before you get onto the track you can make a few handy alterations. First, you can use either mouse or the joystick and customise the sensitivity to suit your style. Next you take your pick from four soundtracks, then choose your route and finally get into the race.

RHANG

Passing the drone racers is tricky, but it is more a matter of technique than raw speed. Where sheer speed does come into it is when you glance at the clock to find you have just five seconds to round the bend and hit the straight at the end of the stage. This calls for a sharp nitrous oxide injection to power you from 280kph to 324kph. It really does the business, not only recovering vital seconds but giving an amazing feeling of speed.

As you pass each checkpoint, the scenery changes and any seconds left over from the last stage are added to your new time limit. Every stage has a set layout that you must learn if you are to win. Between the billboards, direction signs indicate a left or right hand bend ahead, but even these are wrng sometimes! As well as the nitro, you need to learn to make good use of the brakes and come off the throttle at times. Haring around every bend is a sure recipe for a spectacular crash, though once you get the hang of a track you can keep the nitro engaged for almost the whole stage. A progress map at the top of the screen gives you an indication of how far you have to go, along with all the score and time counters.

Where Super Hang On leaves its rivals is in its graphics. The main sprite is virtually a pixel for pixel copy of the arcade original and the scenery is equally well drawn, and complementing these is the superb road. For once the perspective is just right, the hills and bends look realistic and it is all very silky. In fact, everything moves extremely smoothly and at a hell of a rate.

Annoying moans are usually put in place of engine sound effects, but this is not the case with Super Hang On, and when that nitro kicks in you can almost feel the power! It is good to see all four soundtracks have been included, even if they do lack a certain oomph.

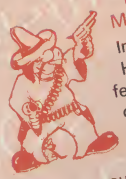
I've got a soft spot for 3D race games, but even if you have not I am sure you will not be able to resist the totally addictive thrill of speeding around four continents on a silver beast at 324kph! Forget the rest, Super Hang On is brilliant, and gets my vote for the best computer race game of all time.

T.H.

"The main sprite is virtually a pixel for pixel copy of the arcade original and the scenery is equally well drawn, and complementing these is the superb road"

Graphics: 9
Sound: 8
Playability: 10
Value: 10
Price: £19.95

HARW
POWERPA



HEY AMIGOS GET MORE WITH AMIGAS!!

In future advertisements Harwoods Hombre will feature SPECIAL OFFERS or NEW PRODUCTS but unfortunately he's got no name...

Send us your suggestions and the winner will receive A PRIZE OF OUR FIRST FEATURED OFFER FREE ! ! !

POWERPLAY PACK 1

Our SUPER VALUE POWERPLAY PACK 1 offers you the chance to buy your Amiga A500 with ELEVEN GREAT GAMES FREE to start you off right. Not only that, we also include ABSOLUTELY FREE, a Mouse Mat, TV Modulator and a Tutorial Disk. This adds up to an AMAZING AMIGA SAVING OF **£264** ! ! !

FREE STARTER PACK
- Sword of Sodan
- Spitting Image
- Hellbent
- Strike Force Harrier
- Power Struggle
- Winter Olympiad
- Quadralien
- Backlash
- Bermuda
- Project
- Skychase
- Stargoose
- Mouse Mat
- Tutorial Disk
- TV Modulator

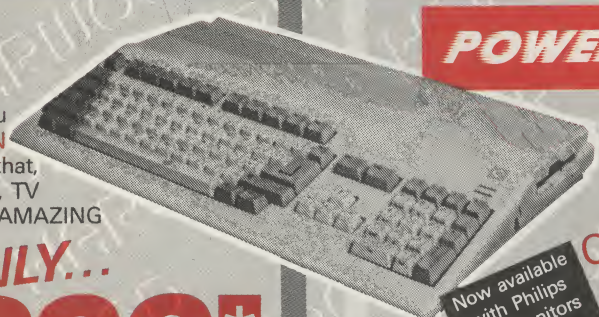
WORTH £264

(N.B. Certain games require a joystick)

ONLY...

£399*

Or Just *£19.09 monthly



POWERPLAY PACK 2

If you thought Powerplay Pack 1 was good value just look at our Powerplay Pack 2!

Now available with Philips CM Monitors PHONE FOR PRICES!

Only **£609**

PACK 2 contains the super "Powerplay Pack 1" plus a CBM 1084S colour monitor - See those games, Hear those games WITH ADDED REALITY !

(N.B. Powerplay Pack 2 doesn't include a TV Modulator)

SAVE EVEN MORE WITH ONE OF OUR ·4·

GRAPHICS HARDWARE

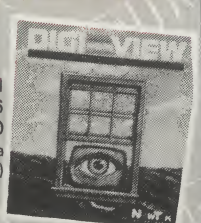
MINIGEN

Add computer graphics to your own videos easily ! ! ! Connect to your Amiga's RGB port and domestic video equipment to mix graphics and moving pictures

MOVIE MAGIC AT ONLY **£113.85**

DIGIVIEW GOLD

Digitise static colour images in IFF format at all resolutions from 2 to 4096 Colours up to 640 x 400 Pixels (Requires video camera or video with clear picture pause)



ONLY **£129.95**

POWERPLAY PACK 3

Take our Powerplay Pack 2 and add (to your choice) a Citizen 120D **OR** CBM 1230/1250 Printer for that COMPLETE AMIGA HOME ENTERTAINMENT SYSTEM

only... **£749**

POWERPLAY PACK 4

Take our Powerplay Pack 2 and add (to your choice) a Citizen 120D **OR** CBM 1230/1250 Printer with "The Works" integrated Professional Software instead of Powerplay's games

WE MEAN BUSINESS AT JUST **£749**

—ACCESSORIES—

MICROBLASTER JOYSTICK

New, Sturdy, arcade quality, fully microswitched, normal & rapid fire - 12 Mth Warranty

TAKE CONTROL **£12.95**

ZIPSTICK SUPERPRO'

Professional quality with that "Perfect Feel", autofire 12 Month Warranty **£18.95**

—BLANK MEDIA—

BULK DISKS *(Prices per 10 disks)*

3.5" DS/DD **£9.95** - with library case **£10.95**

Commodore The Original Diskette

Higher Quality, Lower Price

High quality branded media, fully guarantee SUPERB VALUE. . . . Box of Ten 3.5" DS/DD Only **£14.95**

WHY BUY FROM HARWOODS ?

ORDERING MADE EASY

- ORDER BY PHONE-Simply call our 24hr Hotline using your Access/Visa or Lombard Charge Card.
- ORDER BY POST-Make cheques, bankers-building society drafts or postal orders payable to GORDON HARWOOD COMPUTERS (N.B. Personal or business cheques require 7 days clearance from date of receipt before despatch)
- PAY AT YOUR BANK-If you wish to pay by Credit Giro Transfer at your own bank, phone for details
- FREE POSTAL DELIVERY goods in UK Mainland (5-7 day delivery) OR COURIER SERVICE - Add £5 per major item next working day delivery UK Mainland (Orders normally despatched on day of receipt of payment or cheque clearance

COMPARE OUR SERVICE

After you've purchased from Harwoods we'll still be here to completely satisfy you should any problems arise.

- 12 MONTH WARRANTY - If goods prove to be faulty within 30 days of purchase they will be replaced with A NEW UNIT. For the remainder of the Guarantee Period, all warranty repairs will be made FREE OF CHARGE!
- COLLECTION FACILITY-Any faulty computer or monitor will be collected from your home FREE OF CHARGE within this Guarantee Period!!!
- FULL TESTING PROCEDURE-All computers are thoroughly tested prior to despatch.

CREDIT TERMS

Gordon Harwood Computers are licensed credit brokers and facilities to pay by credit are offered for most items.
12-36 month HP terms are available (subject to status). Just phone us and we will send you details along with an application form. (Applications are required in advance)

* Examples quoted are based on 36 months with no deposit.

OOD'S Portfolio

A5

To help us process your order, please quote this number along with the Dept code shown in the address block.

DATA STORAGE DEVICES

30 MEGA BYTE HARD DISK
Real power for your Amiga, connects directly through sidecar expansion bus. Ultra reliable, built in power supply & fan, styled to match your Amiga.

NEW

MEGA STORAGE AT ONLY

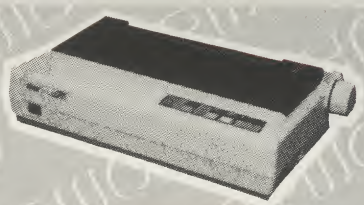
£399

(includes 12 months replacement warranty FREE, optional 24 months available)

CUMANA DISK DRIVES
All Cumana drives feature enable/disable switches, 1 meg capacity, compatible with A500, A1000, A2000 and PC1.
2nd drives powered from computer, 3rd drives have internal power supplies.
(5.25" drives are 40/80 Track switchable)

CAX 354-3.5" 2nd drive	£99.95
CAS 354-3.5" 3rd drive	£124.95
CAX 1000-5.25" 2nd drive	£129.95
CAS 1000-5.25" 3rd drive	£139.95

SAVE MONEY SAVE DATA!



PRINTERS

Our range of 9 Pin dot matrix printers include the following features. . . .
Standard centronics parallel port for direct connection to Amiga, PC's, ST, Archimedes etc; Tractor and friction paper feeds.

CITIZEN 120D **FULL 2 YEAR WARRANTY**
Very reliable low cost printer, interchangeable interfaces available for RS232 or Serial type for CBM 64 etc. **£149.95**

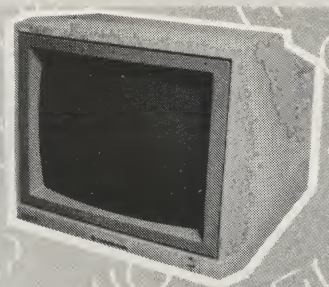
COMMODORE MPS 1230/1250
Both supplied with dual interface, ideal for C64/128/16/+4 or Amiga etc. **£159.95**

COMMODORE MPS 1500C
High quality colour printer manufactured by Olivetti, Epson JX 80 compatible **£199.95**

STAR LC 10
Multiple font options from front panel, excellent paper handling **£199.95**

STAR LC 10C
Colour version of the popular LC 10 allowing the effect of full colour on screen dumps **£239.95**

FREE! PRINTER CABLES
To connect to a variety of computers
(Please state type when ordering)



MONITORS

COMMODORE 1084S
Manufactured by Philips, 14" High res. colour, Stereo Speakers, Allows full use of your Amiga's 80 column text display and High Resolution or Multi-Colour Graphics Modes.

AMAZING VALUE AT ONLY **£239**

PHILIPS CM 8833
14" Stereo colour monitor with Green Screen Switch - Better clarity of text.

SUPER SAVER AT ONLY **£249**

FREE LEADS!
1084S - Supplied with leads for Amiga, C64, C128 and standard colour IBM PC compatibles.
CM 8833 - Please specify your computer for correct FREE connection leads.

SOFTWARE

AEGIS VIDEO TITLER
for use with Genlocks such as MINIGEN **£99.95**

WORKBENCH 1.3
Latest version of Amiga O S with many additional features **£14.95**

THE WORKS
Integrated w p, mailmerge, spreadsheet, pro database multicolour graphics **£79.95**

BBC EMULATOR SOFTWARE
BBC Basic at six times the speed **£49.95**

HARDWARE UPGRADE

COMMODORE A501 RAMPACK
Now you can see those extra features in your software such as enhanced graphics, better sound etc. Extra 512K RAM & Real Time Clock **£139.95**

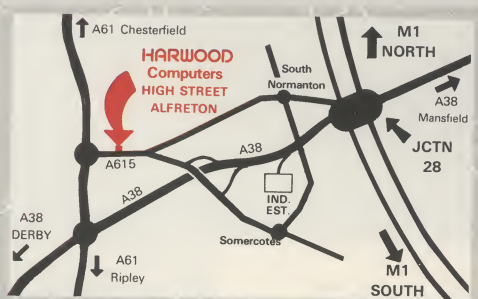
24HR ORDER LINE - 0773 836781

VISIT OUR SHOWROOM

Please call and see us; we will be only too pleased to demonstrate the entire range of amazing Amigas and a host of peripherals, accessories and software.

REMEMBER WE ARE **NOT** JUST ANOTHER MAIL ORDER COMPANY

All prices are what YOU PAY, and there are NO HIDDEN EXTRAS. VAT & Postage are included and are correct at time of going to press.
E. & O.E. Offers subject to availability and are currently advertised prices.



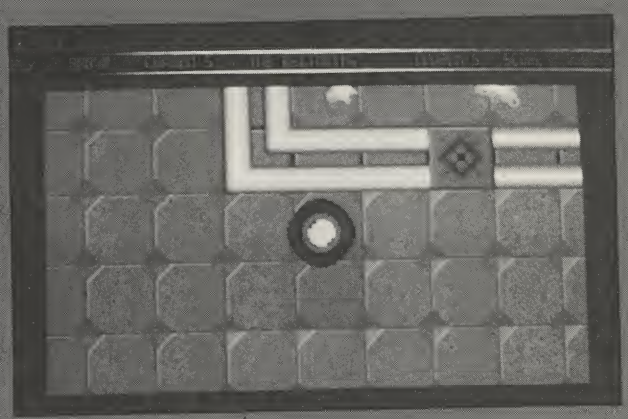
GORDON HARWOOD
HARWOOD
HARWOOD
Computers
OFFICIAL COMMODORE BUSINESS CENTRE

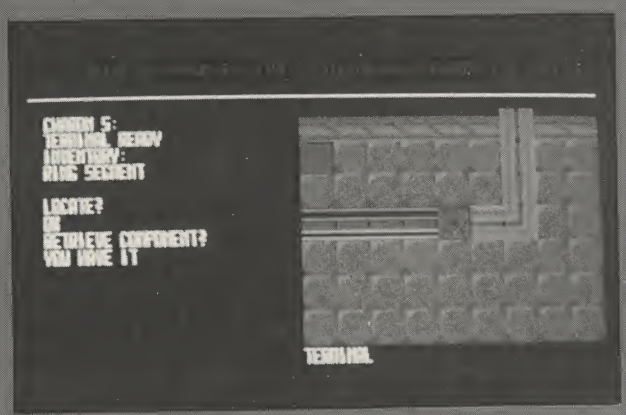
GORDON HARWOOD COMPUTERS
DEPT A U I : 69-71 HIGH STREET
ALFRETON : DERBYS : DE5 7DP
Tel: 0773 836781 Fax: 0773 831040

CHARON 5

Mindware International

Mindware is not a name most Amiga users would associate with games, but this Canadian software house intends to change that with the release of Charon 5, a blend of arcade zapping and strategical brainwork.





According to the plot, 124 years into the future, the local space boffins have spotted a strange spacecraft drifting towards your neck of the solar system. On further investigation they find it deserted, but also come across a wealth of high-tech gadgets that could be put to good use on your own planet. A team is sent in to strip the cruiser of its valuables, but in the process a previously undiscovered alien lifeform is awakened and taking a dislike to the scavengers, the aliens herd them into the lower deck of the craft and dismantle the life-support system. Your orders are to repair the system and save the prisoners.

Despite all this talk of a spacecraft laden with technological miracles, the scene is actually very bare. Each chamber has a floor of energy-rich tiles, very occasionally broken up with small barriers. To get the life-support system up and running again, the broken circuit that snakes around the ship must be fixed. You begin in the centre of a cross formation of computer terminals. These are symbolised by tiles marked with a diamond, and each holds a component corresponding to a particular break in the circuit. Log onto one and it gives you the component along with a diagram of its whereabouts. Now you have to locate the break and insert the missing piece.

Once you find it there is a brief sub-game in which you chase a pulse along a scrolling grid in order to rejoin the circuit. You can hardly fail to succeed but it does vary the gameplay a little.

All the time little aliens buzz around you and really are a very weak attempt at a bit of arcade action. Taking pot shots and annoying sparks that constanly irritateis far from my idea of a good blast.

Charon 5 is like an eerily empty version of Andrew Braybrook's old 64 hit Paradroid. Guiding your extremely unimaginative ship around a bland cruiser, replacing a missing link every now and then is tedious from the word go. With no in-game music and only a handful of effects there is virtually no atmosphere either. The only feature of any note is a clever graphic effect on the loading screen. Billed as a new design concept, Charon 5 is in fact a watered-down combination of dated gamestyles, and consequently has very little to offer either the strategist or the zapper.

T.H.

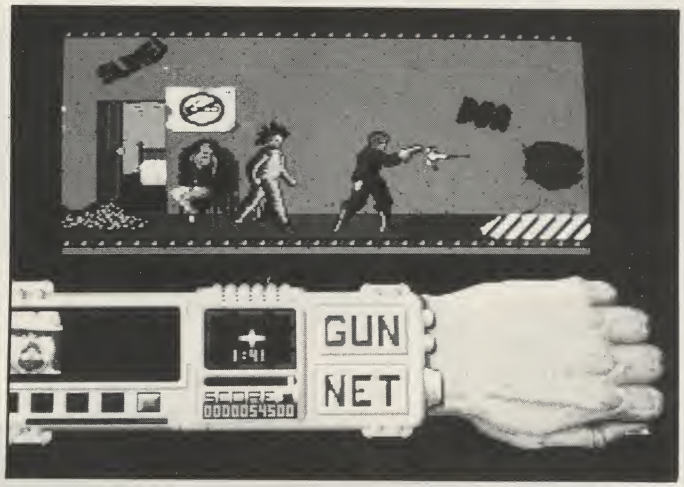
Graphics: 4
Sound: 3
Playability 3
Value: 3
Price: £19.95

Gremlin

TECHNO COP

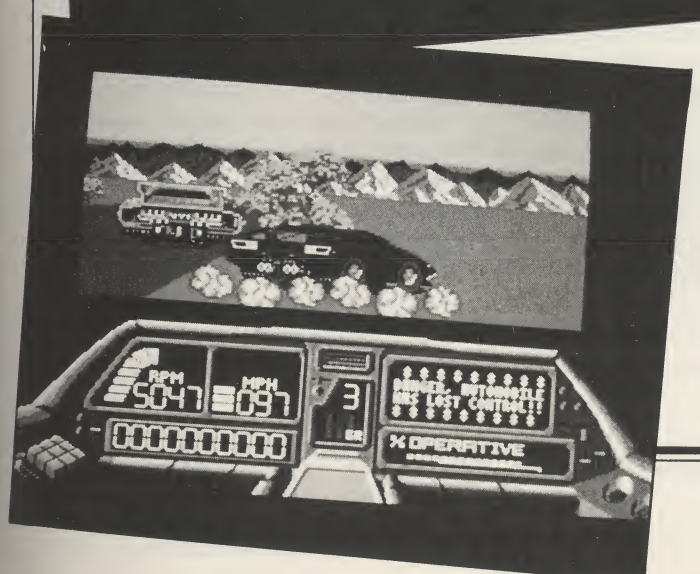
If there's any truth in the novels, comics and films dealing with the future of the World's policing, today's crime rate is set to take a sharp turn for the worst. Techno Cop takes you to one such future world, where street crime has got way out of hand. It's your patch, and as the best Techno Cop around you set your sights on cleaning up the district, not with good old fashioned "community policing", rather with your paralysing snare-net launcher and a magnum pistol.

Before you get to use these lethal weapons you have to make your way to the scene of the crime. Your transport bears a striking resemblance to a Lambourghini Countach, (Now there's an incentive that would send recruitment soaring!) but is in fact a VMAX Twin Turbo Interceptor. The roads are infested with all the usual Mad Max characters, most of whom are just a nuisance to be shot of barged off the road. All the action is squeezed into the top half of the screen where everything is viewed from very low down, giving a slightly cramped feeling. Although the 3D graphics just about work well enough, this section slips up in throwing you out in the wrong direction as you corner, so instead of steering into the bends you have to do the complete opposite! An on-board computer gives you a readout



of the distance to your destination, and as you reach it you are given a brief of your target and a digitised mug-shot.

Now the game turns into a Rolling Thunder variant. With the help of your pocket radar, your current concern is to track down the villain. The maze of corridors is connected by a system of lifts which initially lead you straight to your enemy, but later are used as confusing red herrings. Various other punks and junkies attack you with knifes and axes. This is where your magnum makes an appearance. A few short blasts from this reduces the baddies to a floundering pile of flesh. Alternatively you could trap them in a Spiderman-style net, or if you're feeling really forgiving you could just somersault over them. The sprites are well drawn and animated, but the extremely gorey death sequences could be seen as just too vivid for some. Again, only the top half of the screen is used for the game, but even so the programmers have had trouble in scrolling the backgrounds smoothly.



First impressions are not at all favourable due to the very familiar Roadblasters/Rolling Thunder format. It does improve as you play, and despite all its faults both sections have their moments. I can see the Deathwish III style of mass murder in the name of the law seeming unnecessary to some, so think twice about choosing this for Tiny Tim's birthday present.However, for the bloodthirsty aching for vivacious revenge on the muggers and others indulging themselves in anti-street sports, Technocop could just make your day.

T.H.

Graphics: 6
Sound: 5
Playability: 6
Value: 5
Price: £19.95

ZANY GOLF

Electronic Arts

If you thought a game of crazy golf on a blustery British seafront was wacky, see just how crazy the game can be and get a load of EA's Zany Golf.

It gets off to a good start, allowing up to four people to take part, a feature bound to boost any sporting game's appeal. Nine holes are included on the disk, each loaded one after the other.

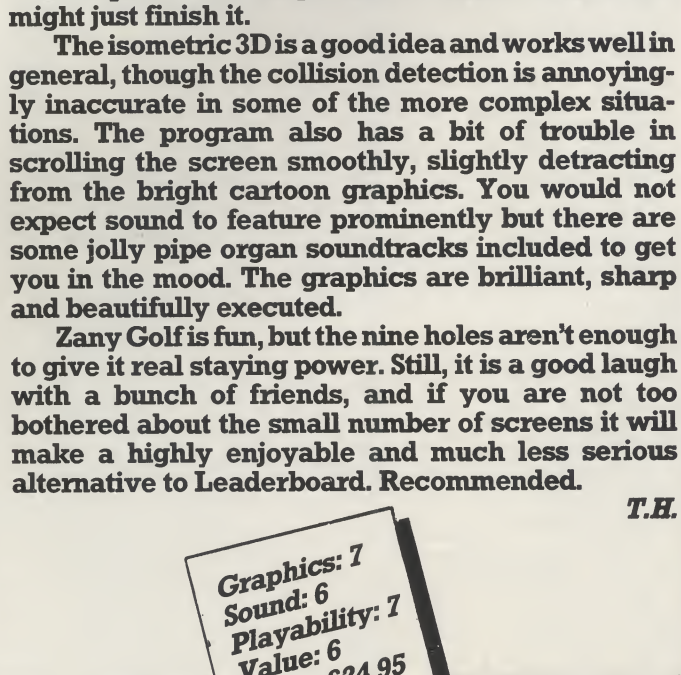
The windmill hole is first up. In classic crazy golf style, the idea is to putt the ball into a slot which leads down through the doorway of a lighthouse on the level below. Alternatively you could attempt to get the ball through the door of the windmill and earn yourself an extra stroke. Using the angled walls and fences you now have to get the ball down the hole before your allotted number of shots runs out.

Loading between the holes can get a bit tiresome, but there is a little light relief in the way of small but excellently detailed graphics introducing the theme of each as it loads.

Things start to get silly at the hamburger hole. Here you find a burger sitting over the hole, which can only be moved by quickly clicking the mouse button to make it bounce up and down. Once you get a good speed up, whack the ball at the jelly-like spill of ketchup and hope it ends up somewhere near the hole.

"Once you get a good speed up, whack the ball at the jelly-like spill of ketchup and hope it ends up somewhere near the hole."

No-one could say Zany Golf's holes are unimaginative. There is a pinball table with working flippers and mushrooms, and other holes with controllable fans and bumpers for squeezing the most out of each shot. The final one is played in a scene that looks like



Dr. Frankenstein's lab. By activating buttons on a control panel and teleporting to higher ledges you might just finish it.

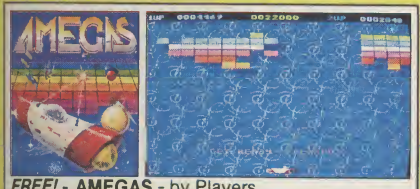
The isometric 3D is a good idea and works well in general, though the collision detection is annoyingly inaccurate in some of the more complex situations. The program also has a bit of trouble in scrolling the screen smoothly, slightly detracting from the bright cartoon graphics. You would not expect sound to feature prominently but there are some jolly pipe organ soundtracks included to get you in the mood. The graphics are brilliant, sharp and beautifully executed.

Zany Golf is fun, but the nine holes aren't enough to give it real staying power. Still, it is a good laugh with a bunch of friends, and if you are not too bothered about the small number of screens it will make a highly enjoyable and much less serious alternative to Leaderboard. Recommended.

T.H.

Graphics: 7
Sound: 6
Playability: 7
Value: 6
Price: £24.95

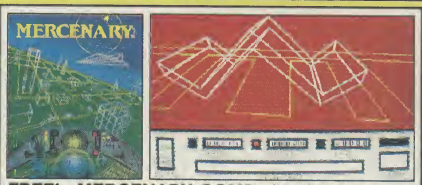
FREE! TENSTAR PACK WORTH OVER £229!



FREE! - AMEGAS - by Players

FREE! - INSANITY FIGHT - by Microdeal

FREE! - ART OF CHESS - by SPA

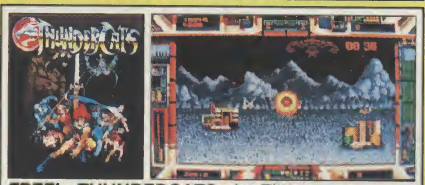


FREE! - MERCENARY COMP - by Novagen

FREE! - BARBARIAN, ULT WARRIOR - by Palace

FREE! - TERRORPODS - by Psygnosis

FREE! - BUGGY BOY - by Elite



FREE! - THUNDERCATS - by Elite

FREE! - IKARI WARRIORS - by Elite

FREE! - WIZBALL - by Ocean

Commodore AMIGA

£346.95 +VAT= £399

INCLUDES FREE UK DELIVERY

The Amiga 500 is one of a new breed of technologically advanced computers, which are now emerging as the new standard for home computing, based around the new Motorola 68000 chip. The A500 has 512K RAM and a 1Mbyte double sided disk drive built-in. It can be connected directly to a wide range of monitors, or to a domestic TV set through a TV modulator. Designed with the user in mind, the A500 features a user friendly WIMP environment and comes supplied with a free mouse. And, when you buy your Amiga from Silica Shop, the UK's No1 Amiga specialists, you will experience an after sales service that is second to none, including a technical support helpline and free newsletters and price lists. Return the coupon below for our current information pack, which will give details of the Silica service and the very latest Silica Amiga offers. E&OE.

WHY SILICA SHOP?

Before you decide when to buy your new Commodore Amiga computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer as well as expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Amiga related products in the UK, a full time Amiga specialist technical helpline and in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home computer field for ten years and can now claim to meet our customers requirements with an accuracy and understanding which is second to none. Here are just some of the things we can offer you:

THE FULL STOCK RANGE: The largest range of Amiga related peripherals, accessories, books and software in the UK.

AFTER SALES SUPPORT: The staff at Silica Shop are dedicated to help you to get the best from your Amiga.

FREE NEWSLETTERS: Mailed direct to your home as soon as we print them, featuring offers and latest releases.

FREE OVERNIGHT DELIVERY: On all hardware orders shipped to Silica Shop customers within the UK mainland.

PRICE MATCH PROMISE: We will normally match our competitors offers on a 'same product same price' basis.

FREE TECHNICAL HELPLINE: Full time team of Amiga technical experts to help you with your technical queries.

But don't just take our word for it. Complete and return the coupon below for our latest Amiga literature and begin to experience the Silica Shop specialist Amiga service.

PHOTON PAINT PACK

A500 Computer	£399.99
TV Modulator	£24.99
Photon Paint	£69.95
TenStar Pack	£229.50
TOTAL RRP:	£724.43
LESS DISCOUNT:	£325.43
PACK PRICE INC VAT:	**£399**

1084S MONITOR PACK

A500 Computer	£399.99
1084S Colour Monitor	£299.99
Photon Paint	£69.95
TenStar Pack	£229.50
TOTAL RRP:	£999.43
LESS DISCOUNT:	£350.43
PACK PRICE INC VAT:	**£649**

FREE FROM SILICA

When you buy the Amiga 500 from Silica Shop, you will not only get a high power, value for money computer, we will also give you some spectacular free gifts. First of all, we are now including a TV modulator with every A500 stand alone keyboard, so you can plug your Amiga straight into your TV at home (the modulator is not included with the A500+A1084S pack as it is not required for use with monitors). Secondly, we have added a free copy of Photon Paint, an advanced graphics package with an RRP of £69.95. Last (and by no means least!), so that you can be up and running straight away, we are giving away the sensational TENSTAR GAMES PACK with every A500 purchased at Silica Shop. This pack features ten top Amiga titles which have a combined RRP of nearly £230! Return the coupon for details.

FREE TENSTAR PACK

When you buy your Amiga 500 from Silica Shop, we want to make sure you get the best deal possible. That is why we are giving away the TENSTAR GAMES PACK worth nearly £230, absolutely FREE with every A500 purchased from us. The TenStar Games Pack includes ten titles for the A500, each individually packaged in its own casing with instructions.

Amegas	£14.95
Art Of Chess	£24.95
Barbarian, Ult Warrior	£19.95
Buggy Boy	£24.95
Ikari Warriors	£24.95
Insanity Fight	£24.95
Mercenary Comp	£19.95
Terrorpods	£24.95
Thundercats	£24.95
Wizball	£24.95
	£229.50

TOTAL RRP: £229.50 INC VAT

DO YOU OWN AN AMIGA?

If you already own an Amiga computer and would like to be registered on our mailing list as an Amiga user, let us know. We will be pleased to send you copies of our price lists and newsletters FREE OF CHARGE as they become available. Complete the coupon and return it to our Sidcup branch and begin experiencing a specialist Amiga service that is second to none.

SILICA SHOP:

SIDCUP (& Mail Order) 01-309 1111
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX
OPEN: MON-SAT 9am - 5.30pm LATE NIGHT: FRIDAY 9am - 7pm

LONDON 01-580 4000
52 Tottenham Court Road, London, W1P 0BA
OPEN: MON-SAT 9.30am - 6.00pm LATE NIGHT: NONE

LONDON 01-629 1234 ext 3914
Selfridges (1st floor), Oxford Street, London, W1A 1AB
OPEN: MON-SAT 9am - 6.00pm LATE NIGHT: THURSDAY 9am - 8pm

To: Silica Shop Ltd, Dept PCWK 12/88, 1-4 The Mews, Hatherley Road, Sidcup, Kent DA14 4DX

PLEASE SEND ME FREE LITERATURE ON THE AMIGA

Mr/Mrs/Ms: ..... Initials: ..... Surname: AMUSR.03.89

Address: .....

.....

.....

Postcode: .....

Do you already own a computer
If so, which one do you own? .....

SPACE HARRIER

Elite

Is there any home computer or console that has not yet had the pleasure of running a version of Sega's Space Harrier? Umpteen versions have been spawned from the original coin-op across just about every possible format, and now at last Amiga owners get a chance to stride into the Fantasy Zone.

"Under one arm you carry a small but extremely powerful rocket which doubles up as a rapid-fire laser gun"

Dragon Land has been overrun by a band of evil supernatural creatures, bringing chaos to the once peaceful country. With numerous successful space-war missions under your belt, you take it upon yourself to send these monsters back to hell. Under one arm you carry a small but extremely powerful rocket which doubles as a rapid-fire laser gun. Unfortunately the speed controller on the rocket seems to be jammed at the top end, so it's full speed all the way.

As you enter the first stage, a fleet of airborne boulders come speeding over the horizon and into the foreground in a split second. They break up with just one shot but are lethal in a collision, knocking you out of the sky and relieving you of a life in the process. More deadly than these are the robots that provocatively swirl around the screen firing white hot missiles in your direction. At the end of the level, an enormous Chinese dragon rolls into view. Dodging back and forth, it lets off a barrage of fireballs and takes numerous direct hits to the head before exploding.

Subsequent levels introduce heads of rock, magic mushrooms, giant droids and two-headed dragons among others. Apart from the very short

disk access between levels, your first break from the amazingly fast action comes at the end of level five! Here you get a once in a lifetime chance to ride on the back of a fluffy dragon in the bonus stage.

"Apart from the very short disk access between levels, your first break from the amazingly fast action comes at the end of level five!"

Space Harrier has always been a stunning game, and the Amiga version is no different. Not only does it use a full PAL display, but the graphics fill the entire screen! Great! Why don't all games houses follow suit? Furthermore, the 3D graphics are extremely fast and smooth, enhanced by the effect of the changing perspective as you dive and climb.

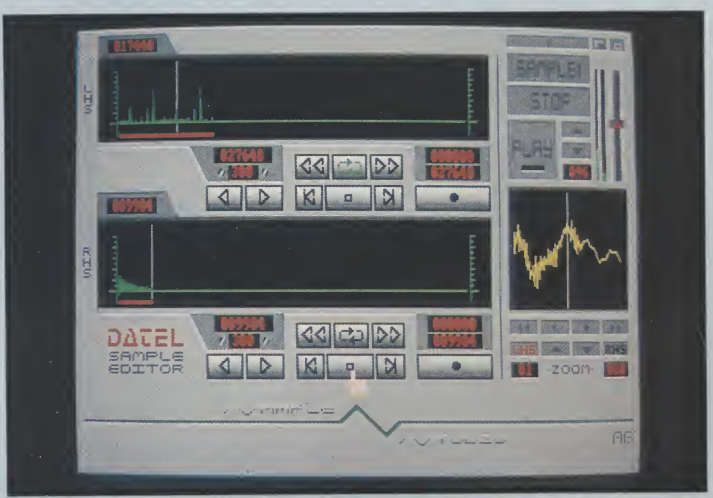
Some of the speech from the original game has been included, but the "Get ready!" sounds as if it was sampled over the telephone. The other effects are agreeable although the music could do with a bit more punch.

Space Harrier demands few skills from the player, most of the game is just dodging around the screen and holding down the fire button. That isn't to say it is easy; it is hard, but just holds back from going too far, giving you a chance but keeping your palm nice and sweaty. The programmer has been considerate enough to include a mouse control option, allowing very precise movement. Like the arcade machine, it is the exhilerating speed which gives Space Harrier its pull, and for that it deserves much praise. To put it simply, you could hardly have asked for a better conversion! This is the one to get and keep playing!

T.H.

Graphics: 9
Sound: 6
Playability: 8
Value: 8
Price: £19.99

DATEL ELECTRONICS



AMIGA PRO SAMPLER STUDIO + DATEL JAMMER

- A top quality sound sampling system at a realistic price.
- 100% machine code software for realtime functions.
- HiRes sample editing.
- Realtime frequency display.
- Realtime level meters.
- Files saved in IFF format.
- Adjustable manual/automatic record trig level.
- Variable sample rate & playback speed.
- Seperate scroll line waveform windows & zoom function with Edit windows for fine accurate editing.
- 3D shot of sound waveform. Wave editor to design your own waveforms or adjust existing ones.
- Microphone & line input 1/4" Jack & Din connections.
- Software files can be used within other music utilities.

ONLY £69.99 PLEASE STATE A500/1000/2000

To complement the Sample Studio the Datel Jammer gives you a 5 octave keyboard to play & record your sampled

FEATURES:-

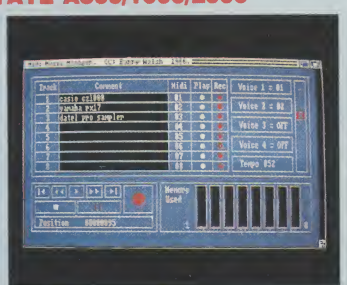
- 4 track sequencer up to 9999 events.
- Tempo & Beat controls.
- Mixer Controls on Instruments.
- Load & Save sequence.
- Works on standard IFF file sounds.

MIDIMASTER

- Full Midi Interface for A500/1000/2000 (please state model).
- Compatible with most leading Midi packages (including D/Music).
- Midi In - Midi Out x3 - Midi Thru.
- Fully Opto isolated.
- No need to pay more - Full Midi standard.

ONLY £34.99

SPECIAL OFFER!! BUY THE MIDIMASTER & THE MIDI MUSIC MANAGER TOGETHER FOR ONLY £59.99

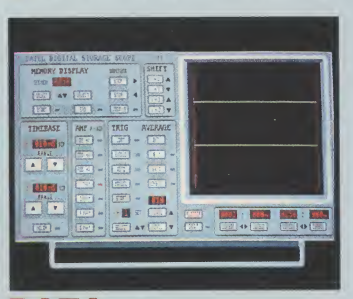


MIDI MUSIC MANAGER

A TRULY PROFESSIONAL MIDI PACKAGE AT A REALISTIC PRICE

- Play sampled sounds on Amiga from any Midi track.
- Full dubbing - listen to one track while recording another.
- Works with many Midi interfaces including Datel Midi Master (see Ad)
- 8 realtime Midi tracks for record/playback.
- Adjustable track length - limited only by available memory.
- Works with standard IFF files.

ONLY £39.99



DATA ACQUISITION UNIT

- Turn your Amiga into a sophisticated measuring instrument capable of measuring a wide range of data inputs.
- Sample & display events from microseconds to hours- with amplitudes from milivolts to 50 volts.
- A Hardware/Software package with very high spec. including:-

DIGITAL SCOPE DISPLAY - 2 channel inputs.Manual or continuos display. Timebase 500ms/div to 20us/div-accurate to 5%.

- 6 bit flash conversion gives 2 million samples/sec.

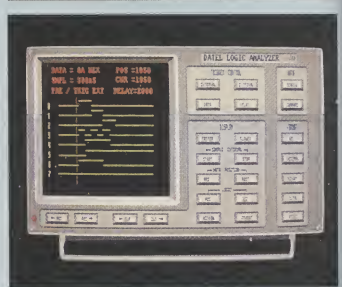
PLOTTER DISPLAY

- Timebase range 1 sec to 10hrs per plot.

All features found on units costing thousands of pounds.

ONLY £99.99

PLEASE STATE A500/1000/2000



LOGIC ANALYZER

- At last a logic analyzer at a realistic price for the Amiga computer.
- The Datel Logic Analyzer gives you many of the features found in instruments costing thousands of pounds.
- Data in Hex, Decimal, Binary, Octal & Ascii.
- Buffered inputs, CMOS & TTL compatible.
- Specifications include 8 channel input, 8K memory, external trig, internal 10Mhz crystal clock, 8 ranges from 20~S to 100~S, search facilities & word trigger.
- Load & save facilities.
- Complete with pod.

ONLY £99.99

PRINTER LEADS

- 25 pin 'D' to 36 way Centronics parallel lead. 1.2m length.
- A500 or 1000, please state.

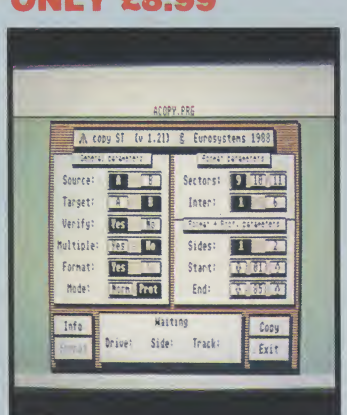
ONLY £8.99

MIDI CABLES

- Top quality.
- 3 metre length.

ONLY £6.99 PAIR

UNBEATABLE VALUE



DEEP SCAN BURST NIBBLER

- Copy an entire disk in under 60 seconds.
- Works with one drive or two.
- Multiple copy option allows you to make many copies from one original.
- Copy 1 or 2 disk sides - up to 85 tracks.
- Full verify option.
- Compatible with A500/1000/2000.
- Easy to use Icon driven programme takes the mystery out of disk backup.
- Special format parameters for non-standard formats.

ONLY £29.99

NOTICE 1988 COPYRIGHT ACT

DATEL ELECTRONICS Ltd. neither authorizes or condones the use of it's products to reproduce copyright material. It is illegal to make copies of such material without the expressed consent of the copyright owners or thier licencees.

DATEL ELECTRONICS

EXTERNAL 3.5" DISC DRIVE

- Slimline extra low profile unit - only 6" long!
- Top quality drive mechanism.
- Throughport allows daisy-chaining other drives.
- A superbly styled case finished in Amiga colours.
- Fully compatible.
- 1 meg unformatted capacity.
- Good length cable for positioning on your desk etc.

NEW LOW PRICE ONLY £79.99 SINGLE DRIVE

ONLY £149.99 TWIN DRIVE

ADD £5 FOR COURIER DELIVERY IF REQUIRED

EXTERNAL DRIVE SWITCH

- Switch in/out of external drives.
- Save on memory allocated for drives not currently in use.
- DF1 & DF2 controlled.
- Fits between computer & driver(s).

ONLY £9.99

STEREO BOOSTER SYSTEM

- Boost the output of your Amiga in glorious stereo.
- 30W + 30W power amplifier.
- 5 band graphic equalizer.
- Complete with cables for A500/A1000/A2000 models.
- Slimline colour matched metal case with built-in mains power unit.
- Headphone socket.

ONLY£59.99

MATCHING SPEAKERS

- High quality miniature 3 way speaker units in die-cast aluminium shelf enclosures.
- 30 Watts 8 ohm each.

ONLY £39.99 PAIR

LOW COST BAR CODE READER

- Low price Bar Code Reader.
- Model 420, high performance, low cost Bar Code Reader.
- Works with any Amiga/ST computer system (please state which) via the RS232 interface.
- Features a built-in self-testing function.
- Features a diagnostic indicator.
- Can read codes EAN, UPC, Inter leaved 2 of 5, Code 39, CODABAR.
- Comes complete with wand, ready to go.
- Easy to install.

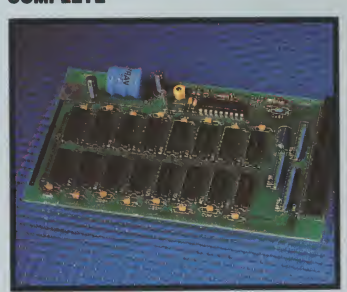
ONLY £189.99

REPLACEMENT MOUSE

- High quality direct replacement for mouse on the Amiga.
- Teflon glides for smoother movement.
- Rubber coated ball for minimum slip.
- Optical system counting - 500/mm.

Special offer - free mouse mat + mouse house (worth £7.99).

ONLY £29.99
COMPLETE



512K RAM EXTENSION CARD

- Available with/without calender/clock option.
- Simply plugs internally into A500 slot.
- Switch in/out with switch supplied.
- Fitted in minutes - no soldering etc.
- Accepts 41256 DRams (zero K fitted).
- With calendar/clock onboard time/date automatically booted.
- Battery backed to retain time/date.

ONLY £19.99
FOR STANDARD CARD TO ACCEPT 512K

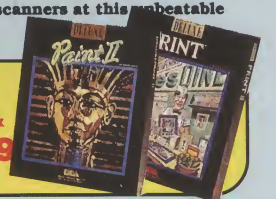
ONLY £34.99
FOR VERSION WITH CLOCK/CALENDAR

NB THESE PRICES ARE FOR BOARDS WITHOUT RAM CHIPS. PHONE 0782 744707 FOR RAM PRICES. PHONE FOR LATEST FULLY POPULATED BOARD/RAM PRICES.

GENISCAN GS4000 AMIGA

- An easy to handle Handy Scanner featuring 105 mm scanning width & 200 dpi resolution enables you to reproduce graphics & text on your computer screen.
- Adjustable switches for brightness & contrast.
- A powerful partner for Desk Top Publishing.
- With Geniscan you have the ability to easily scan images, text & graphics into the AMIGA.
- Powerful software allows for cut & paste editing of images etc.
- Save images in suitable format for most leading packages including DELUXE PAINT etc.
- Printout for Epson compatibles.
- Package includes GS4000 scanner, interface & Scan Edit software.
- Unmatched range of edit/capture facilities simply not offered by other scanners at this unbeatable price.

SPECIAL OFFER
COMPLETE WITH DELUXE PAINT II & DELUXE PRINT FOR ONLY £189.99
INCLUDING HARDWARE/SOFTWARE



ALL ORDERS NORMALLY DESPATCHED WITHIN 48 HRS

HOW TO ORDER ...

BY PHONE	BY POST	FAX
0782 744707 24hr Credit Card Line	Send cheques/POs made payable to "Datel Electronics"	0782 744292 UK ORDERS POST FREE EUROPE ADD £1 OVERSEAS ADD £3

PRICES AND SPECIFICATIONS CORRECT AT TIME OF PRESS AND SUBJECT TO CHANGE WITHOUT NOTICE

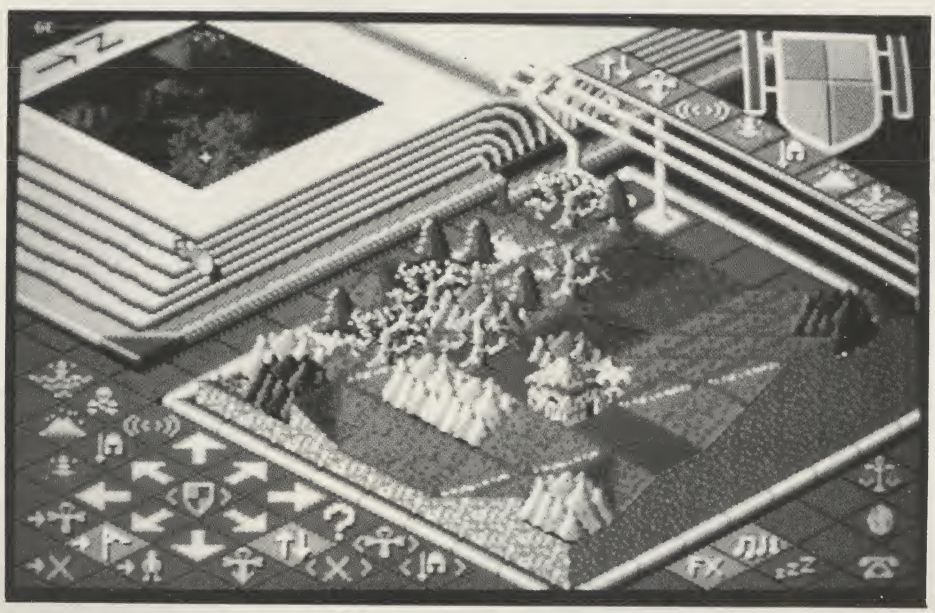
CALLERS WELCOME - Please reserve goods by telephone prior to visit.

DATEL ELECTRONICS

DATEL ELECTRONICS LTD., FENTON INDUSTRIAL ESTATE
GOVAN ROAD, FENTON, STOKE-ON-TRENT, ENGLAND.

SALES ONLY	TECHNICAL ONLY
0782 744707	0782 744324

HEARD IT ON THE GRAPEVINE



You remember I told you last month about how Tiertex, in their conversion of Capcom's Tiger Road, had improved their scrolling routines from Rolling Thunder? Well, if you took a good look at the screenshot you might have seen a Probe Software logo at the bottom of the picture. It just goes to show, even us humble immortals at Amiga User make a mistake once in our lives.

While we are on the subject of Capcom conversions, do you remember what a cock up Tiertex made of Street Fighter? Now they've got a second chance to prove themselves with its pseudo-sequel Human Killing Machine. As before you travel the globe, confronting every Fritz and Helga that has the cheek to stand in your way. The thought of kicking the hell out of a Spanish matador is pleasing, but when the game demands you take on the bull things take a turn for the worse. Beating up bulls and dogs isn't really my scene. Where will it all end? Stoning live cats and biting the heads off chickens?

Impressions are a new software house due to make a first appearance with a game called Raider. In a similar style to Oids and Thrust, you control a rotating, thrusting ship on a mission to retrieve cogs from the surfaces of eight planets. An old theme but a popular one, available any day now.

3D graphics have featured regularly in computer games from the start, but true 3D is another matter. A new game aims to go one better than the Super Hang Ons of this world with its stereo vectors. Elite's Wanderer uses blue and red clones of each image, off-set at varying distances combined with filters on the 3D specs to give a real 3D effect. The game itself casts you as a mercenary hired by an

continued on page 48

GOLDRUNNER
ATARI ST
JUPITER PROBE
ATARI
ST
microdeal
HIT DISKS
VOLUME 1
SLAYGON
&
AMIGA
The Karate Kid Part II
The Computer Game
. . . when only the winner survives
AMAZING
VALUE
&
IN THE SHOPS
NOW!
£24·95
TIME BANDIT
AMIGA
LEATHERNECK
microdeal
HIT DISKS
VOLUME 2
MAJOR MOTION
TANGLE WOOD
microdeal

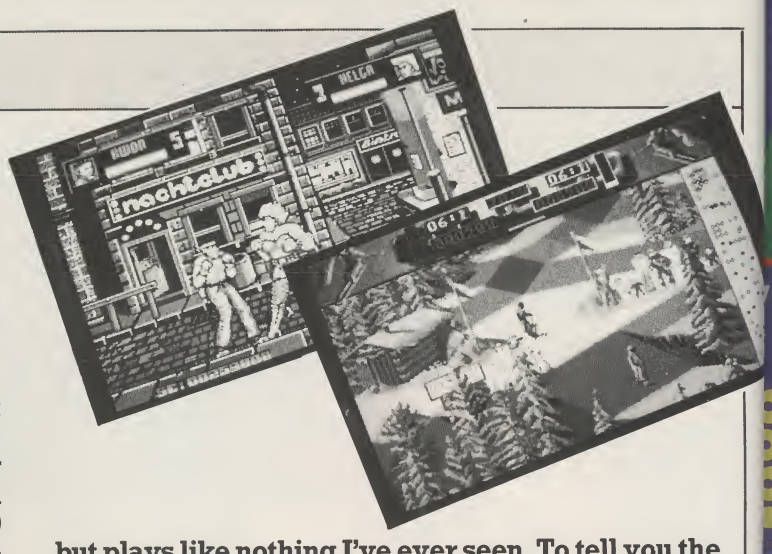
continued from page 46

alliance of ten planets to destroy their overlord.

Enterprising Codemasters have something to offer anyone disappointed by this year's snowless ski season. Advanced Ski Simulator gives you two player piste action over seven resorts. Tightly packed slalom gates, abundant conifers and inconveniently placed log cabins test your co-ordination to the full.

Apart from a couple of strip poker games, when it comes to combining sex with computer games no-one has yet managed anything halfway decent (or should it be indecent?). Emmanuelle from Coktel Vision takes the extremely awkward style of 20,000 Leagues Under The Sea and replaces Captain Nemo with a frisky young female in Rio. You, as the equally frisky young male, have to track her down via the ever-willing women of Rio. The game fails on two counts: slow and confusing gameplay, and an almost total lack of raunchiness.

One last snipplet before I go, and that's Populous. An unusual game that looks a little like a wargame



but plays like nothing I've ever seen. To tell you the truth, it's not my cup of tea, and with its spooky soundtrack it's likely to send me off the sleep (not hard on a Monday morning), but if you want something a bit different, keep 'em peeled for Populous. It will be reviewed in our next issue very enthusiastically – but not by me!

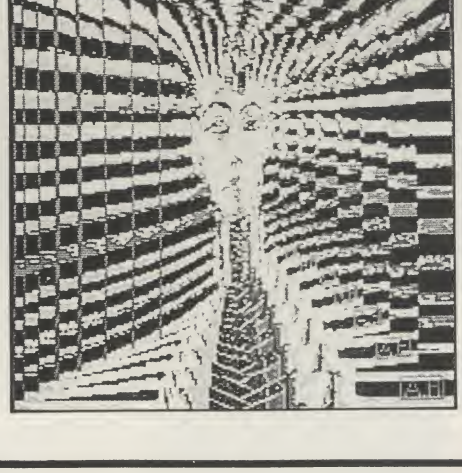
T.H.

PREVIEW

DP III ARRIVES!

Electronic Arts has announced the release of Deluxe Paint III, the first in a new class of graphics software that integrates paint and animation. In addition to improving DeluxePaint II, their best-selling and most highly regarded paint program on the Amiga, it offers a whole new category of artistic capabilities – the ability to create animation. Deluxe Paint III will be available in early April.

"DeluxePaint III," E.A. tells us, "is a professional quality graphics tool that actually paints animation." The new program allows users to AnimPaint (animation-paint) a series of screens in the same way as they would normally paint a single screen. Users can also create and paint with multi-frame Animated Brushes. In this mode, users can create multi-frame animations as a bird in flight. In addition, DeluxePaint III integrates animation with its Perspective capability in a feature called Move. This quick and easy feature allows the user to define a brush, a distance for it to travel (in any of three dimensions), a rotation (about any of three axis) and the number of animation frames to draw the movement across.



In addition to adding animation capabilites, DeluxePaint III enhances DeluxePaint II with extra-halfbrite support, enabling users to paint in 64 colours instead of only 32; wrap mode, in which a brush can be wrapped into any shape; tint mode, which makes it easy to colourize black and white images; direct overscan painting, so users don't have to scroll to create full-video images; an entirely new airbrush, redesigned to meet the professional needs of an artist; access to any number of fonts, styles and sizes in the new all-in-one font requester and much faster operation. DP III needs 1 Meg of memory.

DeluxePaint III, £79.99 (249DM / 880FF). Upgrades are available through Electronic Arts Customer Service.

AMIGA USER INTERNATIONAL

MARCH 1989

£1.95
USA $4.50

AMIGA GOES PRO!

PRO VIDEO PLUS

MOVIESETTER

STARBOARD 2

K SPREAD

SUBSCRIBE!

You can keep up to date with everything that's happening on the AMIGA scene by taking out a subscription to Commodore AMIGA User International.

This new and unique international magazine is now published every month and will be mailed to you direct. Simply fill out the coupon for this special introductory offer, and send it to us now.

Please make cheques payable to: CROFTWARD LTD

To: Subscriptions Manager, AMIGA User International
120-126 Lavender Ave, Mitcham, Surrey CR4 3HP.
Please send me 12 issues of AMIGA User International

- ☐ Subscription rate U.K. £23.00
- ☐ Europe £32.00
- ☐ Outside Europe £46.00 Airmail

Date subscription to commence

☐ Cheque enclosed
☐ Please debit my Access Card No.

Expiry date Signature

Name

Address Postcode (business)

County

Telephone (home)

PHANTOM FIGHTER

FALCON

WIN!

MEMORY EXPANSIONS & LOADS OF SPECIAL OFFERS

0 74470 12129 9 03

Image Works

BLASTEROIDS

Take a look at just about any computer game released in the last five years or so, and the odds are you will find it has close links with one of the few arcade machines that started it all off. Strip away all but the bare bones of Sega's latest race 'em up Power Drift for example, and you are left with a very similar concept to the monochrome Night Driver. Similar comparisons can be made with most games, but fortunately the original idea has usually come so far that similarities go unoticed. Blasteroids is the sequel to one of those pioneering coin-ops, but this time the original concept is not so well developed.

When coin-ops began, a number of different graphics techniques were experimented with. Mechanically projected images made a brief appearance, but these were overshadowed by the more hi-tech vector graphic and pixel-orientated bitmapped graphics. Black and white vectors were soon outdone by the multi-colour pixels, but before that day, Asteroids was the best alternative to Space Invaders. Since then it has cropped up in more public domain libraries and budget software than any other game.

Blasteroids sets you the task of clearing numerous screens of asteroids. Your ship uses a combination of rotate and thrust controls for movement, and a forward-firing cannon for blowing away the space debris. The wrap-round screen means that anything that leaves off one edge reappears on the opposite side. All the asteroids begin as a few large ones and shatter into smaller pieces each time you shoot them until they disappear all together.

So what's new in Blasteroids? The most striking enhancement is the addition of digitised backdrops behind each screen. On the gameplay side, you now get a ship with the ability to alter its form between three different crafts. One has high speed thrusters, one has more firepower and the last, a lumbering giant has the strongest shields. All sorts of bonuses and spaceships float around the screen giving better weapons and protection against the many dangers. Clear all the screens in the current grid of nine or sixteen and you move on to the confrontation with Mukor. This not so jolly green giant fills the obligatory position of mothership, and once destroyed yields some extra weaponary.

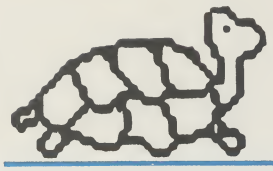
Apart from the spacey backdrops the graphics are all a bit weedy, and although it plays at an acceptable speed the sprites (especially the bullets) would have benefited from smoother animation. The sound is no better; the music soon begins to annoy, and the effects amount to no more than a constant aural assault of scratchy blasts and explosions.

I was never a fan of Blasteroids in the arcades, and Image Works' conversion has done nothing to alter the situation. As far as I'm concerned, a few extra weapons and a mothership aren't enough to revive the now tired concept, and justify the hefty twenty five pounds asking price. Take a look if you like the coin-op, but don't expect too much.

T.H.

Graphics: 6
Sound: 5
Playability: 5
Value: 5
Price: £24.95

TURTLESOFT



See below for special offers

TURTLESOFT AMIGA PACK
AMIGA A500

Free TV Modulator Free Paint Prog
Free Software the following titles:-
Amegas/Art of Chess/Buggy Boy/Barbarian
Ikari Warriors/Insanity Fight/Mercenary/
Terrorpods/Wizball/Thundercats

£419.95 INC VAT FREE DELIVERY!!

TURTLESOFT PRINTERS

Citizen 120D NLQ	£149.95
Panasonic KXP-1081 NLQ	£169.95
MP165 ++ NLQ 165CPS	£199.95
Star LC-10	£219.95
Star LC-10 Colour	£259.95
Seikosha SP-180AI	£169.95
Seikosha SP-1200AI	£189.95
Seikosha SL-80AI 24 Pin	£339.95

TURTLESOFT AMIGA MONITORS

New A1084S Hires Col Mon	£259.95
Philips CM8832 Col Mon	£219.95
Philips CM8833 Col Mon	£259.95
Philips CM8852 Col Mon	£289.95

TURTLESOFT DISC DRIVES

Cumana CAX354 880k 3.5" Drive
Now with On-Off Switch

£99.95 INC VAT FREE DELIVERY!!

TURTLESOFT 3.5" DISC BONANZA

10 DSDD + Library Case	£12.95
10 DS DD Quality Branded	£16.95
20 DSDD + Lockable Disc Box	£22.95
40 DSDD + Lockable Disc Box	£39.95
50 DSDD + Lockable Disc Box	£47.95
80 DSDD + Lockable Disc Box	£69.95

MOUSE MATS
SPECIAL PRICE £4.95

Disk Cleaning Kits only £4.95
Amiga Dust Covers from £8.95
Lockable Storage Box (holds 40 3.5" disks) £6.95
Mouse Brackets £2.95
Amiga Joystick Extension (pair) £6.95)

JOYSTICKS

Crystal Joystick Turbo
ONLY £16.95
Euromax Professional Standard
ONLY £14.95

AMIGA GAMES SOFTWARE	Retail Price	Our Price
1943	£24.99	£19.95
Adventure Construction Set	£14.95	£10.49
Afterburner	£24.99	£19.95
Albedo	£19.99	£13.95
Alien Syndrome	£24.95	£16.95
Amiga Gold Hits	£24.95	£16.95
Archon Collection	£19.95	£13.95
B.A.T	£24.95	£16.95
Bards Tale II	£24.95	£16.95
Bards Tale III	£24.95	£16.95
Battlechess	£24.95	£16.95
Blazing Barrels	£19.99	£13.95
Bombuzal	£19.99	£13.95
California Games	£19.95	£13.95
Captain Fizz	£24.95	£16.95
Chessmaster 2000	£24.95	£16.95
Chuckie Egg	£19.95	£13.95
Computer Hits Vol. II	£19.95	£13.95
D. Thompson's Olympic Challenge	£24.95	£16.95
Driller	£24.99	£16.95
Dungeon Master (1Mb only)	£24.95	£16.95
Earl Weavers Baseball	£24.95	£16.95
Elf	£19.95	£13.95
Emerald Mine	£14.95	£10.49
Empire	£24.95	£16.95
Enlightenment	£19.95	£13.95
Espionage	£19.95	£13.95
Excalibur	£14.95	£10.95
F-16 Combat Pilot	£24.95	£16.95
F-16 Falcon	£24.95	£16.95
Face Off	£14.95	£10.49
Fernandez Must Die	£24.99	£16.95
Ferrari Formula One	£24.95	£16.95
Final Command	£24.95	£16.95
Firezone	£24.99	£16.95
Flight Simulator II	£39.95	£27.95
Football Manager 2	£19.95	£13.95
Fortress Underground	£14.95	£10.49
Fusion	£24.95	£16.95
Game Over II	£19.99	£13.95

AMIGA GAMES SOFTWARE	Retail Price	Our Price
Helter Skelter	£14.95	£10.49
Highway Hawks	£19.95	£13.95
Hostages	£24.95	£16.95
Hotball	£24.95	£16.95
Hot Shot	£19.95	£13.95
Interceptor	£24.95	£16.95
Iron Lord	£24.95	£16.95
Jet (SC/Disc Compatible)	£39.95	£27.95
Joan of Arc	£24.99	£19.95
Leaderboard Collection Birdie	£24.95	£19.95
Legend of the Sword	£24.95	£16.95
Leisure Suit Larry	£19.95	£13.95
Lombard RAC Rally	£24.95	£16.95
Major Motion	£19.95	£13.95
Maniax	£19.95	£13.95
Mega Pack (Tynesoft)	£24.95	£16.95
Mind Fighter	£24.95	£16.95
Monsters of the Night	£19.99	£13.95
Music Construction Set	£24.95	£16.95
Nebulus	£19.99	£15.95
Nigel Mansell Grand Prix	£19.95	£13.95
Night Hunter	£24.95	£16.95
Obliterator	£24.95	£16.95
Operation Wolf	£24.95	£16.95
Pac Mania	£19.95	£13.95
Peter Beardsley	£19.95	£13.95
Phantom Fighter	£19.99	£13.95
Pioneer Plague	£24.95	£16.95
Power Drome	£24.95	£16.95
Puffy's Saga	£24.95	£16.95
Quadralien	£19.95	£13.95
Quantox	£14.95	£10.49
Questron	£24.99	£16.95
R-Type	£24.99	£19.95
Reach for the Stars	£24.95	£16.95
Roadblaster	79.95	13.95
Robbeary	£19.95	£13.95
Robocop	£24.95	£16.95
Rocket Ranger	£29.99	£20.95
Rock 'n' Roll	£24.95	£16.95

AMIGA GAMES SOFTWARE	Retail Price	Our Price
Rolling Thunder	£24.95	£19.95
Sargon III	£19.95	£13.95
Scenery Disc 11	£24.95	£16.95
Scenery Disc 7	£24.95	£16.95
Scenery Disc Japan	£19.95	£13.95
Scenery Disc W/European	£19.95	£13.95
Scrabble Deluxe	£19.95	£13.95
Shadow Gate	£24.95	£16.95
Shoot 'em' up Con Kit	£24.99	£16.95
Skate or Die	£24.95	£16.95
Skateball	£24.95	£16.95
Soccer Supremo	£14.95	£10.49
Space Racer	£19.99	£13.95
Speed Ball	£24.95	£16.95
Starfight	£24.95	£16.95
Star Fleet 1	£24.95	£16.95
Star Glider II	£24.95	£16.95
Star Goose	£19.95	£13.95
Street Fighter	£24.95	£19.95
Strip Poker 2 Plus	£14.95	£10.49
Strip Poker Plus 2 Data Disc 1	£9.99	£6.99
Sword of Sodan	£29.95	£20.95
Tales of Lore	£24.95	£16.95
Teenage Queen	£19.95	£13.95
The Munsters	£19.95	£13.95
Thunderblade	£24.99	£19.95
Tiger Road	£19.99	£15.95
Time & Magik	£19.95	£13.95
Turbo Cup	£19.99	£13.95
Turbo Tracks	£19.95	£13.95
Ultima IV	£24.95	£16.95
Ultimate Golf	£19.99	£15.95
Virus	£19.95	£13.95
Wanted	£19.95	£13.95
Weird Dreams	£24.99	£16.95
Wizards Crown	£29.95	£20.95
World Darts	£14.95	£10.49
World Tour Golf	£24.95	£16.95
Zany Golf	£24.95	£16.95
Zoom	£19.95	£13.95

AMIGA SOFTWARE BUSINESS UTILITY/GRAPHIC/SOUND	Retail Price	Our Price
Adrum	£39.95	£29.95
Aegis Animator/Images	£103.50	£83.95
Aegis Audio Master	£46.00	£36.95
Aegis Diga (Comms S/Ware)	£59.95	£46.95
Aegis Draw-Plus	£198.95	£156.95
Aegis Impact	£63.25	£51.95
Aegis VideoScape 3-D	£143.75	£116.99
CLImate	£39.95	£31.95
Delux Arts Part 1 Data Disc	£9.99	£6.99
Delux Arts Part 2 Data Disc	£9.99	£6.99
Delux Hot & Cool Jazz D/Disc	£9.99	£6.99
Delux Music Construction	£69.95	£49.95
Delux Paint II	£69.95	£49.95
Delux Paint III		Phone
Delux Print II	£49.95	£35.95
Delux Video	£69.95	£49.95
Delux Photo Lab	£69.95	£49.95

AMIGA SOFTWARE BUSINESS UTILITY/GRAPHIC/SOUND	Retail Price	Our Price
Devpack Assembler	£59.95	£41.95
Digi Paint	£59.95	£41.95
Instant Music	£24.95	£16.95
K-Seka 68000 Assembler	£49.95	£36.95
Lattice C Ver. 4	£189.95	£134.95
Logistix V1.2 SP/DB/GR (1MB)	£114.95	£89.95
MCC Macro Assembler	£69.95	£55.95
MCC Pascal	£89.95	£64.95
MCC Shell	£49.95	£39.95
Micro Base	£19.95	£13.95
Micro Text	£19.95	£13.95
Modula 2 (Standard)	£99.95	£77.95
Modula 2 (Developers)	£149.95	£116.99
Music Studio	£34.99	£23.95
Page Setter	£79.95	£64.95
Photon Paint	£69.95	£49.95
Pro Sound Designer (S/W & H/W)	£79.95	£62.99

AMIGA SOFTWARE BUSINESS UTILITY/GRAPHIC/SOUND	Retail Price	Our Price
Pro Sound Designer (S/W Only)	£34.95	£27.95
Publishing Plus DTP	£99.95	£82.95
Publishing Partner Prof'nal	£149.95	£116.99
Scribble II	£89.95	£49.95
Superbase Personal	£59.95	£45.95
Superbase Professional	£249.95	£189.95
Superplan	99.95	74.95
Transformer	£49.95	£29.95
TV * Show	£69.95	£56.95
TV * Text	£69.95	£56.95
VIP Professional	£99.95	£77.95
Visawrite Desktop	£99.95	£69.95
Word Perfect V4.1	£228.85	£179.95
Works (The) WP/SP/DB	£149.95	£69.95
Write & File (WP/DB needs 1MB)	£99.95	£77.95
X Copy	29.95	23.95
Zuma Fonts Vol 1, 2 & 3	£39.95	£33.95

Please ring for availability on these specials as stocks are strictly limited

AMIGA SOFTWARE SPECIALS	Special Price
Arctic Fox	£9.99
Armageddon Man	£10.49
Beyond the Ice Palace	£13.95
Crazy Cars	£13.95

AMIGA SOFTWARE SPECIALS	Special Price
Dark Castle	13.95
Iridon	£10.99
Jinx	£11.95
Kings Quest III	£9.99

AMIGA SOFTWARE SPECIALS	Special Price
Phantasm	£10.99
Platoon	£10.49
Rockford	£9.99
Sacrophaser	£6.99

AMIGA SOFTWARE SPECIALS	Special Price
Skychase	£9.99
Skyfox II	£9.99
Spaceport	£6.99
Three Stooges	£16.95

Software & small items sent 1st Class Post. Cheques require 7 days for clearance. Please make cheques payable to Turtlesoft

Hardware items sent by overnight courier – Now free of charge Please ring for availability of new software items

Ring us for super Atari ST Deals Hardware & Software. Just because you don't see it – Doesn't mean we haven't got it – Call for Details

Post: Send Cheques/PO or Visa/Access details to the address below. Phone: Call (0476) 591040. 24 Hour Service with your Visa/Access details

Turtlesoft, Dept. AUI , Unit 3, The Old Malthouse, Springfield Road, Grantham, Lincs. NG31 7SE

Subject to availability, all items are despatched within 24 hours. E&OE

Save space, save your Amiga!

The Precision Amiga 500 Control Centre is what you and your Amiga has been waiting for. You slip the A500 into the lower area and place your monitor on top, and you have a unit that is as firm as an A2000.

The Control Centre is strong and well-constructed from special lightweight metal. It is beautifully designed for maximum space saving with the minimum of fuss. Its features include:

★ A large front shelf for disk drives and peripherals
★ Joystick ports on the outside for easy access
★ Colour coordinated to match your Amiga

The Control Centre has a R.R.P. of £49.95, but you can get one exclusively from AUI at the special price of £44.95 (+£2.50 p & p). Why pay more?!? Simply fill out the coupon and we will rush you your personal A500 Control Centre. ***Save space and save your Amiga from harm!***

To: Amiga User International
40 Bowling Green Lane, London EC1R 0NE

Please send me ☐ Amiga 500 Control Centre(s) at the special price of £47.45, including VAT and p&p

Please make cheques payable to Croftward Ltd, or debit my Access Card No:

Signature..... Exp. date .....

Name.....

Address .....

.....

Please allow 28 days for delivery

A9041

A New Future.

In STEREO for the Amiga 500 and 2000.

FutureSound has recorded all the frogs, explosions, choirs, guitars, guns, drums, cars and movie stars that bring your Amiga to life. Delivering the finest quality samples with an editing system that offered many sophisticated digital editing features, FutureSound quickly established itself as the premier audio digitizer for the Amiga. But our £175 price made it difficult for many but the most serious developers and power users to easily afford. So we've trimmed our costs, added new features, and introduced the new FutureSound 500. With a New Lower Price that anyone can afford.

£79.95 inc VAT.

Same quality, New features:

- .Records two tracks simultaneously
- .Separate microphone input with built in amp
- .Samples up to 28,000 samples per second, 20,000 samples per second per channel in stereo
- Sliding input volume control
- . Ribbon cable attaches to parallel port
- .Same easy-to-use software editor, with new features
- .Support for hard disks, RAM disks, Vdo devices
- . Works with 1.3 and fast file system
- . Listen to input through digitizer

FutureSound 500™

Being or occuring in the time ahead. The sensation caused by vibrating wave motion.

For further information, please contact:

Applied Visions, (UK) Ltd.

Jersey Supreme Works, 538-546 Whippendale Road,

Watford, Hertfordshire, WD1 1QN.

Telphone:0923 818078 Fax No:0923 817417

Dealer & Distributor Enquires welcome.

FURTHER ENHANCEMENTS...

Mark Smiddy took a look at the long awaited Workbench 1.3 and discovered a mine of new software

Workbench 1.3 has been around for some time now in several different guises with all sorts of curious version numbers: the last I heard of being Omega 8. Now at last the final version has been agreed and the result looks very impressive. The Enhancer software as it is called comes on three disks with a very well produced manual and a very attractive package – all this for less than the price of an arcade game.

The disks comprising the pack are Workbench 1.3, Extras 1.3 and Kickstart 1.3: herein lies the first problem. You can not use Kickstart 1.3 on the newer Amiga 500 and 2000 series computers since Kickstart 1.2 has been included on a ROM already fitted to the machine. This does have the advantage of being more user friendly though and saves the effort of a 2 disk boot every time you switch on.

Incidentally, if you happen to have bought a new machine around since 1988 you may already have the 1.3 Kickstart ROMs fitted. Such machines can be identified by the fact they ask for Workbench 1.3 at startup – although all were supplied with Workbench 1.2. In the event though this anomaly only makes a noticeable difference if you want to boot Workbench from a hard disk – and can cause a few problems with very early games and PD software.

But what about the new Workbench? The most noticable differnce is the lack of the CLI icon. In fact CLI has been replaced by a new version of CLI called Shell. Essentially Shell is a CLI with a couple of important differences. Shell uses a new device peculiar to Workbench 1.3 called NEWCON: this provides consol input/ouput similar to CON: but the lines can be edited using the cursor keys. With CON:, if you made a mistake before pressing return you had to delete the offending characters and start over. Shell also maintains a 2k line history – which means you can recall the last couple of dozen commands and re-edit them.

The story of Shell does not stop there though – it has some extra commands that should really have been included with the Amiga at the outset. The CLI has really been the bugbear of many a programmer and perfect ammunition for the sternest of critics. Now Commodore have put most of those faults to ammends. One of those common complaints was the fact all commands had to be loaded from disk every time they were invoked. This meant two things. Firstly, very slow response to the simplest of commands and secondly a lot of confusing disk juggling.

Shell corrects these problems with a very elegant solution. You simply make the most commonly used commands reside in memory – not in the RAM disk as some have suggested (the solution in Workbench 1.2) but in a special resident structure. This surmounts the need to set up special paths the RAM disk C directory for commands. When a command is invoked Shell checks the resident list for it automatically: if it can not be found, DOS then searches the normal path.

Most of the commands supplied with Workbench 1.3 can be made resident – this is determined by a special protection flag called the pure bit which is new in this release. All commands can be forced to become resident regardless of the setting of the pure bit but this is not recommended.

"For example if you make use of the command ChangeTaskPri a lot it could be shortened to TPri. Or, on a more useful level how about D0 and D1 for DIR DF0: and DIR DF1: respectively"

Another new feature of Shell is the ability to use aliases (pseudonyms) for commands or strings of commands. This makes it possible to shorten commonly used commands to something like reasonable length. For example if you make use of the command ChangeTaskPri a lot it could be shortened to TPri. Or, on a more useful level how about D0 and D1 for DIR DF0: and DIR DF1: respectively. Nevertheless, aliases must be easily remembered or they become useless. Just in case you do forget; typing Alias or Resident without arguments brings up the list of current definitions.

Something which I have always found a bind with the original AmigaDOS was script files. Up until release 1.3 scripts – batch files if you prefer – had to be executed by typing Execute ‹filename›. Even by using an Alias to shorten execute to X ‹filename› this is still a nuisance, so now a new protection flag has been added to identify scripts so they are executed like programs. The command Protect ‹filename› +S makes a text file an executabe script – that is, when you type the name AmigaDOS runs execute and passes the filename automatically thus saving time and effort.

Similarly, it has previously been impossible to execute scripts from the Workbench. Workbench 1.3 includes a neat little program – albeit an old one – called IconX. With Notepad it is a simple matter to create scripts with a suitable project icon and execute them using IconX. And because IconX brings up its own CLI window it is possible to pass a simple command line to the script using the .key argument.

Whilst on the subject of script files it is worth investigating the new startup script supplied with Workbench 1.3. To say the least it has changed quite dramatically to the point were there are now two scripts. Just for starters the first line is a command to patch known bugs in the operating system. No, not just Kickstart 1.2 but 1.3 as well! Whilst it is easy to criticse Commodore for not catching the bugs in the first place; is is worthy of them to fix at least some afterwards.

The most obvious of the bugs lies in the recoverable alert. This looks like the horrid and all too common Guru Mediatation –

continued on page 56

commodore

FROM £359! AMIGA

Prices include 15% VAT, FREE delivery to your door, and 1 year manufacturer's warranty. Add £15 for next day delivery.

Amiga A500 with TV modulator	£359
Amiga A500 with A1084S hi-res stereo colour monitor	£619
Amiga B2000 (new 1.3 Roms) with WorkBench 1.3 Software	£1095
Amiga B2000M As above, plus A1084S stereo colour monitor	£1345
Amiga B2000 XTM As above, plus PC-XT bridge board & 5¼" drive	£1595

PERIPHERALS AMIGA

A501 plug-in RAM/clock 512K	£129	**A2620** Accelerator Card: 68020 + 68881 + 68851 + 2MB 32-bit RAM	£1499
A1084S stereo colour monitor	£269	**A2058** 8MB Card, 2MB installed	£595
A1081 high-res colour monitor	£225	**A2286** PC-AT board & 5¼" drive	£995
MicroText Teletext Adaptor	£139	**A2088** PC-XT board & 5¼" drive	£349
MiniGen PAL Genlock	£111	**NEC** 3½" internal drive (A2000)	£89
DigiView Gold video digitizer	£125	**A1010** 3½" external disk drive	£99
DigiPic fast frame grabber ***	£150	**Cumana** 5¼" external drive + PSU	£145
SuperPic digitiser + genlock!	£475	**A2092PC** 20MB MS-DOS hd disk	£239
Genlock PAL Rendale Pro	£695	**A2092A** 20MB AmigaDos hd disk	£395
Flicker Fixer Multiscan Adaptor	£375	**A2092PC** 30MB MS-DOS hd disk	£399
Handy Scanner Type IV 400 dpi	£295	**AmDrive** 30MB hard disk (A500)	£475
AmiScan A4 Desktop Scanner	£775	**Supra** 30MB external hard disk	£625
Cherry A3 digitizing tablet	£559	**Scicom** 40MB removable hd disk	£995
Easyl A4 drawing tablet A2000	£325	**MPS 1230** 120 cps draft, 30 NLQ	£149
SupraModem 2400 300-2400 bps	£189	**Star LC10C** colour 120 cps, NLQ	£259
		Star LC24-10 170 cps, 57 NLQ	£339
		HP DeskJet 300 dpi inkjet, B/W	£675
		HP PaintJet colour inkjet 180 dpi	£889
		Xerox 4020 colour inkjet 240 dpi	£1075

TELETEXT AMIGA

Why not enjoy the free **Teletext** databases with the **MicroText** Teletext adaptor... Fully programmable, with **Fastext** facility, instant access to last 16 pages, double page view, **telesoftware** loader, auto-start/background operation... Pages can spoken, printed as ASCII or graphics, saved as ASCII or DIF files... With digital tuning for crystal clear **colour TV**/sound reception on any A1081/1084/CM8833 monitor! Uses Parallel port with throughport for printer. Available from stock for only £139!

PRODUCTIVITY AMIGA

Workbench V1.3 Enhancer		£15.95
C64 Emulator V2.0 (with cable)		59.95
MCC Pascal V2.0		69.95
MCC Assembler		59.95
Lattice C V5.0		159.95
Lattice C Professional		249.95
SuperBase Personal	Relational database power, without programming!	39.95
SuperBase Personal 2	As above, plus text, mail merge, batch entry etc.	62.95
" " Professional V3.01	With Forms Editor and DML programming language	159.95
SuperPlan	Pro Spreadsheet with business graphics, time planner	67.95
Acquisition V1.3	Relational database with programming language	159.95
The Works	Analyze + Organize + Scribble, integrated desktop	69.95
Businessware Accts 1	Invoicing, Sales Ledger, Stock Control, by Panmead	129.95
Businessware Accts 2	General Ledger, Purchase Ledger, by Panmead	129.95
Home Accounts	Comprehensive personal accounts, simple to use	29.95
DGCalc	All the spreadsheet essentials, easy to use	39.95
A/C Fortran	Mainframe quality ANSI 77 Fortran by Absoft	179.95
A/C Basic V1.3	By Absoft. Compiles Amiga Basic... FAST!	124.95
Ultra Dos Utilities	High speed disk backup, ideal for hard-disk users	34.95
Dos-2-Dos	Reads/writes MS-DOS on 5¼" & 3½" Amiga drives	34.95

Superbase PROFESSIONAL

If you can think of it, **SuperBase Professional** can do it! With its unique combination of incredibly simple data management, massive processing ability and high-level program language, **SuperBase Professional** is the only choice for your Amiga! And with text, sound and graphics management, plus relational data handling, **SuperBase Professional** is essential for both beginner and expert...

CREATIVITY AMIGA

PageFlipper + F/X		£89.95
Movie Setter		59.95
Photon Paint		49.95
City Desk V2.0		139.95
Prism Plus		49.95
KindWords 2.0		44.95
ProText V4.0	New fast WP with English dictionary	79.95
VizaWrite Desktop V2.0	High performance desktop WP, now with HQ fonts	69.95
Word Perfect V4.1	Amiga version of the No.1 best selling wordprocessor	149.95
Flow	The Idea Processor from New Horizons Software	39.95
Professional Page	Includes WP, Desktop, colour separations, CAD	182.95
Publisher's Choice	Kindwords 2 +PageSetter 2 +LazerScript +fonts +clip art	89.95
Sculpt-Animate 4D	3D graphics and animation for the professional user	319.95
Pro-Video PAL Plus	Professional video titler with fonts, extra fonts available	169.95
Express Paint V2.0	Overscan PAL + 64 colour Extra Half Brite, text merge	49.95
Professional Draw	The ultimate drawing tool. Uses vectored graphics.	129.95
Aegis Draw 2000	Pro CAD pack with autodimension, unlimited zoom etc.	199.95
X-Cad Designer	Professional CAD system (needs 2MB)	324.95
Intro Cad	Entry level CAD package, printer or plotter output	39.95
Aegis Sonix V2.0	Score, edit, synthesise, improvise. Midi compatible	39.95

■■■ IF YOU WANT IT TOMORROW... CALL US TODAY! ON 01-546-7256 ■■■

Prices are POST FREE & include VAT. Order by phone with your credit card, or send cheque/PO or your credit card number. Official orders welcome. We despatch same day by FIRST CLASS post. Please allow 5 days for delivery of hardware orders. Prices are quoted subject to availability. Ref. A62

VISA

Calco Software

LAKESIDE HOUSE, KINGSTON HILL, SURREY, KT2 7QT. TEL 01-546-7256

NEW FOR YOUR COMMODORE FROM TRILOGIC!

AMIGA AUDIO DIGITISER

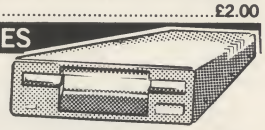
TRILOGIC

... NEW, CHOOSE MONO OR STEREO VERSION

Both Amiga audio digitisers give superb performance, unsurpassed at the price. No software is supplied, since they are fully compatible with Perfect Sound, Prosound Designer, Audiomaster, and Datel's Prosampler. Sampling rates up to 60KHz are possible depending upon the software. An audio lead is supplied for connecting to the headphone socket or line output of a radio, personal stereo, keyboard etc. Full instructions are included, and the mono version also has an L.E.D. overload indicator. A public domain "Sound Workshop" disk is available which has demo versions of Audiomaster & Perfect Sound etc.

MONO DIGITISER ..... **£27.99 POST FREE**
STEREO DIGITISER ..... **£37.99 POST FREE**
SOUND WORKSHOP DISK .... **£4.99 POST FREE IF PURCHASED WITH DIGITISER**
ADAPTOR FOR A1000 ..... **£2.00**

EXTERNAL 3.5" DISK DRIVES

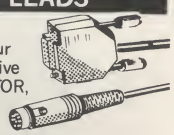


- 720K FORMATTED CAPACITY
- THROUGH PORT
- VERY QUIET OPERATION
- SLIMLINE STEEL CASE
- LOW POWER CONSUMPTION
- CHINON DRIVE MECHANISM

MASTER 3A 3.5" DRIVE WITH NO ON/OFF SWITCH ..... **£74.99 POST FREE**
MASTER 3A 3.5" DRIVE WITH ON/OFF SWITCH ..... **£77.99 POST FREE**

AMIGA MONITOR & PRINTER LEADS

RGB TV & MONITOR LEADS



We have leads to connect all AMIGAS to your TV or colour monitor provided it has an RGB input socket. All leads give a much clearer picture than using the AMIGA MODULATOR, permit ALL 4096 colours to be displayed and include the audio lead (to give stereo with stereo tv's).

ORDER AL 1 FOR TV's WITH 21 PIN EURO (SCART) SOCKET. FITS PHILIPS, FIDELITY, SONY, GRUNDIG, NORMENEDE, ETC. ..**ONLY £9.99**
ORDER AL 2 FOR FERGUSON TV's WITH 7 or 8 PIN DIN SOCKET. MODELS MC01 & MC05, ETC. ..... **ONLY £9.99**
ORDER AL 4 FOR HITACHI & GRANADA TV's WITH 7 PIN DIN SOCKET. MODELS CPT1444, ETC. ..... **ONLY £9.99**

OUR LEADS ARE GUARANTEED TO WORK WHERE OTHERS DON'T!
LEADS ALSO AVAILABLE FOR ATARI ST RANGE. PLEASE CONSULT US IF IN DOUBT.

ATTENTION 1901 MONITOR OWNERS

Why not have your 1901 monitor converted to work with the AMIGA OR ATARI ST — the performance is indistinguishable from the CBM 1084 monitor. After conversion, your 1901 will display all 4096 colours & existing inputs are NOT affected so it remains compatible with the C64 & 128. Conversion costs only £29.95 including lead for callers (carried out while you wait). Or £53.95 including next day collection & delivery by courier. Please phone to arrange an appointment or collection.

OTHER LEADS

AMIGA 64 EMULATOR LEADS — Connects 1541 ETC to your AMIGA. There are several programs which need this lead ..... **AEL 1 ONLY £4.99**
MODULATOR EXTENSION LEADS ..... **MEL 1 ONLY £8.99**
AMIGA PRINTER LEAD — Parallel Type 1.5M long ..... **AMP 1 ONLY £6.99**
3.0M long ..... **AMP 3 ONLY £9.99**

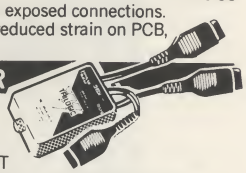
PLEASE STATE WHICH AMIGA YOU HAVE WHEN ORDERING

EXTERNAL DRIVE SWITCHES

ADE 3 — ON/OFF SWITCH FOR DF1 ..... **£8.99**
ADE 4 — ON/OFF SWITCHES FOR DF1 & DF2 ..... **£10.99**

Connects between Amiga port & drive lead. No exposed connections. Switches are on flying leads for easy access & reduced strain on PCB, compared to other makes.

MOUSE/JOYSTICK SWITCHER



- NO MORE UNPLUGGING MOUSE WHEN JOYSTICK REQUIRED
- EXTENDS THE PORT FOR EASIER ACCESS
- SAVES WEAR & TEAR ON THE MOUSE PORT
- PUSHBUTTON SWITCH CAN BE OPERATED WHEN THE COMPUTER IS ON

A VERY USEFUL GADGET — ONLY £10.99 order as DJA1

AMIGA MINIAMP 2 — WITH TWIN STEREO SPEAKERS

MINIAMP 2 combines a mini stereo power amp with two neat speaker units which connect directly to your AMIGA. They are ideal for use with mono TV's & monitors, & simply plug in for instant stereo sound. You'll be amazed at the difference.

MINIAMP 2 WITH REMOTE VOLUME CONTROL & ALL LEADS **ONLY £19.99**

SUNDRY ITEMS — BARGAIN PRICES

SONY/FUJI 3.5" DISKS
100% Guaranteed DS/DD disks
Lowest Prices ..... Per 10 **£12.99**
Lowest Prices ..... Per 25 **£28.49 Post Free**
Lowest Prices ..... Per 50 **£55.99 Post Free**

3/12" DISK BOX FOR 40/50 DISKS. SMOKED LID, LOCKABLE, DSB4 **ONLY £8.45**
31/2" DISK BOX FOR 80 DISKS. SMOKED LID, LOCKABLE, DSB5 .. **ONLY £10.49**
31/2" DISK BOX FOR 100 DISKS. SMOKED LID, LOCKABLE, DSB6. **ONLY £12.49**
PRO5000 JOYSTICK ARCADE QUALITY WITH MICROSWITCHES **£14.95**
PRO5000 JOYSTICK CLEAR TYPE **£15.95**
PRO5000 JOYSTICK CLEAR WITH RAPID FIRE & SLOW MOTION **£16.95**
A500 DUSTCOVER. ANTISTATIC TYPE, ADC1 ..... **ONLY £4.99**
A4 NON-SLIP MOUSEPAD, AFM1 ..... **ONLY £4.99**

Please add 75p part postage + packing to orders under £15.00

FREE CATALOGUE WITH ALL ORDERS
EXPRESS DELIVERY £1.99 Extra

BARCLAYCARD VISA

TRILOGIC

Trilogic, Dept. A.U.I. Unit 1
253 New Works Road Bradford BD12 0QP
Tel - 0274 - 691115 Fax 0274 - 600150

· FAST MAIL ORDER SERVICE · PROMPT DESPATCH · ALL PRICES FULLY INCLUSIVE PLUS 10 DAY MONEY BACK GUARANTEE ON ALL ITEMS. PAYMENT BY CASH, CHEQUES PAYABLE TO TRILOGIC BY POSTAL ORDER, ACCESS OR VISA. ADD £1 EXTRA FOR EXPORT ORDERS, PAYMENT IN STERLING ONLY PLEASE.

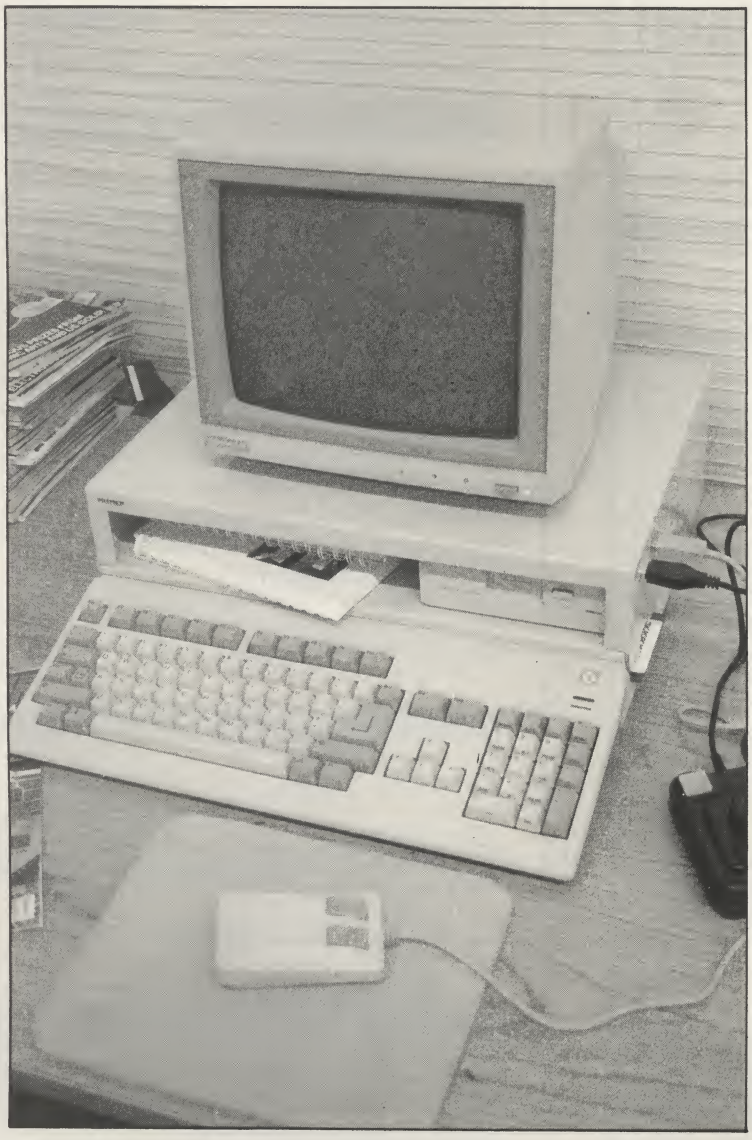
continued from page 54

but is not supposed to cause a the machine to reset. Without the patch recoverable alerts used to be followed by the Guru. Sounds great, but there is a snag. Recoverable alerts are all too rare – most system crashes cause a Guru anyway.

This includes simple little errors like attemping to free memory already marked as free. Quite why such an error deserves the Guru treatement is beyond me – it would be much simpler to tell the faulty program what happened – why victimise the poor user?

Another bug cured in 1.3 is the redirection to the devices, notably to the NIL: device. The idea here was to send a programs output to a non-existant device and thereby get it to quietly run in the background. The PD program Runback got rid of this problem, however. Other, more innocuous bugs have been cured in various aspects of redirection. A few still remain if you care to look hard enough though.

Also new in this release are some interesting devices, programs and partial support for environmental variables. Most useful of these new features is a little program written by Charlie Heath at Microsmiths. Called FastFonts, this clever piece of software improves the screen output in intuition windows by around 20 percent – the difference is noticeable.



Included with the new devices is the reset-proof RAM disk, RAMB0. Obviously, the designers have retained their curious wit. RAMB0 is only really of any use if you have at least 2Mb of RAM. In this case the entire Workbench disk can be copied to it, and the machine re-booted from RAM – 1Mb machines can not partition enough RAM for this to be feasible. For developers, RAMB0 can be used as a reliable tempory storage device for compiling files to and from – it can even withstand most Gurus.

Enhancer is of course supplied on three disks. The other two being Kickstart 1.3 and Extras 1.3. There really is not much difference with the new Kickstart, although it may well not be compatible with large amounts of software PD and commercial – especially games.

Extras 1.3 is another kettle of fish. The main program on the extras disk is of course Amiga Basic – did we really need another copy I wonder – plus the Basic .FD files and example programs. But just when you thought it was safe to go back in the disk box – comes another great new text editor the Amiga version of Micro Emacs.

As an editor, Emacs is very good there is no doubt about that. But as a user friendly piece of software it leaves a lot to be desired. Just for starters there is those typically non-standard menu selections programmers seem so fond of putting in text editors. Visit-file? What on earth is wrong with terms like Load and Merge? It would take a full-length review to cover Emacs in detail – suffice to say here it is good if you stick with it. Also to be found lurking on the extras disk are some standard DTP fonts – at last. These are Times Roman, Courier and Helvetica and are available in the usual point sizes. As things stand though, there is not enough room to copy them on to the Workbench disk without deleting something else first – I suggest some of the old fonts.

Last but by no means least there is the supplied manual. This, even by Amiga standards is very good. The index – my usual guide to a thorough reference is prolific. It is clearly written but by no means intended for beginners or the faint of heart. Another clear guide to AmigaDOS is useful to have at hand while you study this – although it does point out features other guides have overlooked.

In the final reckoning, the ability to edit and recall commands in a command line environment plus the wealth of extra commands makes the Workbench 1.3 a worthy purchase on its own. Even so you could get the same software and a lot more besides with Vega Technologies superb AmiKit – beginners may well find this the best path to take. However, Amikit does not include the FastFonts program, Extras 1.3 or the Kickstart disk 1.3. If you do have the money would be wise to consider both. Highly recommended.

M. S.

Price: £14.95
Contact: Commodore UK, Commodore House, The Switchback, Maidenhead.
Tel: 0628 770088
Product: AmiKit – an introduction to Workbench 1.3

Access

2ND AMIGA DISK DRIVE

VISA

£75
inc VAT & P&P

By selling direct we can provide the best price and maintain the highest quality. Rest assured that if, for any reason, you do not wish to keep the item, then return it to us within 14 days of purchase and we will refund your money in full. Should any item purchased from us fail during the first 12 months then we will repair it free of charge.

NEC mechanism

880K capacity

disable switch

MIRACLE SYSTEMS

NBC, Dean Road, Yate, Bristol BS17 5NH

Telephone orders welcome on (0454) 317772

Art is Long

Art is long, says the Latin tag, but life is brief. Could the Romans have anticipated the Amiga and meant Sharon Long?

This month we feature the computer graphics work of Sharon Long, a designer and illustrator who finds the immediacy of working on the Amiga, (using DPaint II almost exclusively), such a revelation that she now confesses to avoiding 'conventional' work as much as she can.

"Although naturally what I'd really like would be a Quantel Paintbox (who wouldn't!), the Amiga offers a realistic alternative, especially with the power and flexibility of DPaint II. Besides, I wouldn't be without the machine for games."

If you like what you see here, then you will be glad to know that you will get the chance to see more, as Sharon has been commissioned by David Crosweller, (New Frontier Productions) for a forthcoming games project.

FIRST micro

AMIGA HARDWARE & SOFTWARE SPECIALISTS!

111 GLENMOOR ROAD FERNDOWN, DORSET

INC VAT — **0202 874817** — **FREE DELIVERY**

A500 HARDWARE

A500 + TV MOD	£369
A500 + £200 of GAMES	£399
A500 + 1084(S) HIGH RES COLOUR MONT	£599
A500 + Imb DRIVE	£449

AMIGA EXTERNAL DRIVES

Cumana Cax 354E	£89
AF880	£89
RF302C	£85
Supra 20mb H/disk	£499

★ All drives 1mb + on/off switch ★

AMIGA ACCESSORIES

A501-512k RAM	£129
TV Modulator	£24.95
Mouse Mat	Call
Amiga dust-cover	Call
3½ 135TPI DS/DD	Call

COMMODORE C64

C64 Hollywood	£149
C64 Entertainment	£199
1541CII 5¼C64 drive	£159
1581 3½/800K C64 drive	£129
Oceanic 5¼C64 drive	£125

A2000 HARDWARE

A2000 + 1mb RAM	£999
A2000 + 1084(s) monitor + bridge BD + 20mb H/disk	£1599
A2000 + 1084(s)	£1199
20mb hard disk	£299
XT bridge BD	£299

A500/A2000 MONITORS

1084(s) High res monit	£249
Philips CM8833 High res	£229
1901 C64 - colour	Call
1900 C64 - Mono	£129

PRINTERS

Star LC10 (P) 130CDS	£195
Star LC10 Colour	£249
Star LC24-10 (24 din)	£349
Citizen 120D	£119
Commodore MPS1230	£119
Panasonic KXP1124 (24 pin)	£279
Panasonic KXP1081	£169
Epson LX800	£199
Epson LQ500	£319

LASERS

Citizen overture	£1299
HP Lasertet II	£2099

SALE **£349**

A500 + TV MOD

BUSINESS S'WARE

	Sale £
AEGIS Sonix	£39
Animated Images 3D	£99
City Desk	£69
Deluxe Video	£49
Deluxe Music	£49
Deluxe Paint	£49
Digiview Gold	£99
Home Accounts	£19
Mailshot Plus	£39
Maxiplan A500	£69
Music Studio	£23
Organiser II	£49
Page Setter	£89
Page Flipper Plus	£24
Photon Paint	£49
Photon Video	Ring
Professional Page	£175
Pro Writer 2	Ring
Publisher Plus	£69
Sculpt 3-D Animate	£102
Sculpt 3-D	£63
Superbase II	£59
Superbase Personal	£44
Superbase Professional	£169
TV Show/Text	£79
Word Perfect 42	£169
'Works'	£69
Zumafonts	£25

UK TOP 19 GAMES

No.		Sale £
1	Falcon	16.99
2	Sword of Sodan	16.99
3	Dragon Master	16.99
4	Gales Dragon's Domain	16.99
5	TV Sports Football	16.99
6	Dragon Lair	16.99
7	Victory RD	16.99
8	Int Karate +	16.99
9	Speedball	16.99
10	Who Framed Roger Rabbit	16.99
11	Operation Wolf	16.99
12	Lombard RAC Rally	16.99
13	Elite	16.99
14	Motor Massacre	16.99
15	Mickey Mouse	16.99
16	Captain F122	16.99
17	Purple Saturn Day	16.99
18	Technocop	16.99
19	Rocket Ranger	16.99

0202 874817

I wish to order .....

.....

My computer is .....

I enclose cheque/PO for £ .....

or charge my Access/Visa No: Exp. Date ....

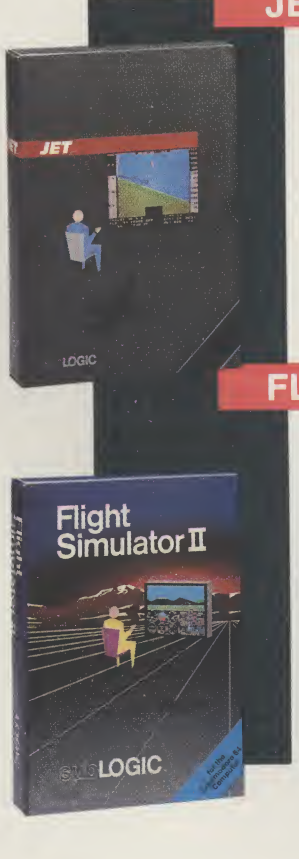
Name .....

Signature .....

Address .....

.....

Postcode ..... Tel. No .....



JET

£34.95 (Commodore 64/128 £24.95)

The award-winning premier jet fighter simulator. Strikingly beautiful carrier-based sea missions complement multiple land-based combat scenarios. Jet also lets you explore the world of SubLOGIC Scenery Disks at lightning speed!

FLIGHT SIMULATOR

£34.95

Nearly 1.5 million copies of this classic, premium flight simulation program have been sold to date. Compatible with SubLOGIC Scenery Disks.

SubLOGIC is a small company dedicated to producing the finest in flight simulation software. Look for our "Flight Notes" advertisements, coming soon, for in-depth descriptions of current SubLOGIC software products and projects.

subLOGIC
35 Piccadilly
Suite 101-110
London W1V 9PB
Telephone: 01-439 8985

GFA BASIC

Andy Eskelson sets a new Basic up against the Amiga standard

There are several BASIC's available for the Amiga, most give a compiled result, that runs as a lone program, without any controlling program. GFA Basic is NOT a compiled system, it is based on the INTERPRETER system, as are 90% of all Basics.

Interpreted Basic is very simple, there is a program running that scans each line that you have entered, and then executes the code that corresponds to the command words that it finds. The big disadvantage of this system is that it is a very slow process. If a command is found that jumps or loops to another line, then the program will scan that line and execute the command words. NO MATTER how many times the loop or jump occurs, the program will still scan and 'interpret' the command words.

Compare this to the operation of a compiler, the command words are converted into a form of code that can run directly, without scanning for the commands.

This means that if there are any loops, the program simply jumps to the correct point and continues running from there. Hence the entire scanning for the command words is removed and this speeds up the execution time dramatically, sometimes by a factor of ten or more.

You may well ask why bother with the interpreter Basics at all, seeing as how good the compiler systems are. Well there are quite a few advantages to the interpreter systems, mainly in the program development stages.

The main advantage is that the programs can be run without messing about with any compiler stages, which normally consist of three stages, edit, comoile and link. The link stage can get very complex with large programs and it is common to use batch files to automate some of the process. With the interpreter you just type RUN and the program will start (and probably crash) if it does crash, you get error messages and you can list out the lines with the error, correct the problem and RUN the program again. So the development cycle is very quick.

GFA Basic is already experienced on other machines so the new code is well proven. However the Amiga does present a few problems that have to be overcome, particularly in the Amiga's library system and graphics interface. In general, GFA has done a good job in these areas, but more of that later.

> *"Most of the main options are presented as a two line menu at the top of the screen, there are twenty items, ten per line."*

The most often used part of any Basic is that which lets you type in your program; the EDITOR. AmigaBASIC's editor is fairly good as such things go, but compared to GFA's editor it is very underpowered. GFA's editor is very keyboard intensive, with only a few functions devoted to the mouse, but I think that this is a good thing, as once you sit down to do some programming, the last thing that you will want to do is keep moving your hand to the mouse. Most of the main options are presented as a two line menu at the top of the screen, there are twenty items, ten per line. The position of the item in the line corresponds to the function key of that number, or the shifted function key.

You can also use the mouse to point at the required item.

Great use of the control key is made, to give the functions like delete line and insert line. I can see that future releases of GFA will enhance the editor even more. In use the editor is very smooth and it can obey a few useful printer control codes, such as headers and footers, line spacing, margins etc.

Every line that you type in is checked for syntax as it is entered, and if incorrect an error is displayed. This helps to get rid of many bugs caused by typing errors and the like.

As you enter the program the editor also indents any loops...so what? Well, this is done automatically! Just forget about the indents completely, the editor will do it all. Unlike AmigaBASIC the GFA editor will remove the indents as the loops close.

I do have one gripe about the editor, and that is the file control requester. It is SLOW and saving your programs is a bit annoying to say the least. The system reads the disk directotry before it allows you to save the program... a bit silly especially if you know the name that you are going to save it as. The file name is kept so the save operation is just a matter of clicking on the save gadget BUT THIS IS NOT OPERATIONAL until the directory has been read, and caused me to call the programmer of that part a few names.

The BASIC itself is VERY extensive with some 360+ commands and access is also provided to 330+ library functions. I found a few problems translating from one AmigaBASIC to GFA. Setting up windows is a little odd, I could not make the border of a window appear, or its sizing gadget until I released it! I found that the window was very easy to set up, and it seems to be a lot better system than AmigaBASIC, but on the other hand setting the various gadgets is not so well defined, however this is not a problem with the BASIC but rather with the handbook.

GFA BASIC limits you to one command per line, so it does make life a little frustrating, but this allows the editor to identify commands and peform the auto indent without any problems. And the subroutine/procedure system has a limitation in that it will only accept ONE RETURN statement, so you have to use various optional tets to get out of a subroutine by means of the exit command.

This is no real problem, but it does mean that a logical progam sequence can get cluttered up with what I think is an unnecessary complication, especially if there are multiple conditions to test for.

> *"Commodore have always had a very bad reputation when it comes to writing handbooks, and it seems that GFA have used the CBM manual as a model for their own!"*

In order to overcome this type of trouble GFA does have a very good CASE statement, and if you are writing a

continued on page 62

continued from page 61

GFA BASIC

program from scratch then it is the natural choice to use. However the biggest problems as always are encoutered when trying to convert from one BASIC to another.

There is far too much ground to cover within GFA BASIC that I can put down here, but if I did cover the ground if would cure the biggest problem that GFA BASIC has... the manual. Commodore have always had a very bad reputation when it comes to writing handbooks, and it seems that GFA have used the CBM manual as a model for their own! If you were starting out with GFA BASIC then you might find the book set out in a more usable manner. However the handbook is NOT for the beginner at all, there is little in the way of explanation of the use of the BASIC, but on the other hand each command IS very clearly set out, but the example I have stated above with the GOSUB/RETURN is not mentioned in the command for GOSUB, it is only implied.

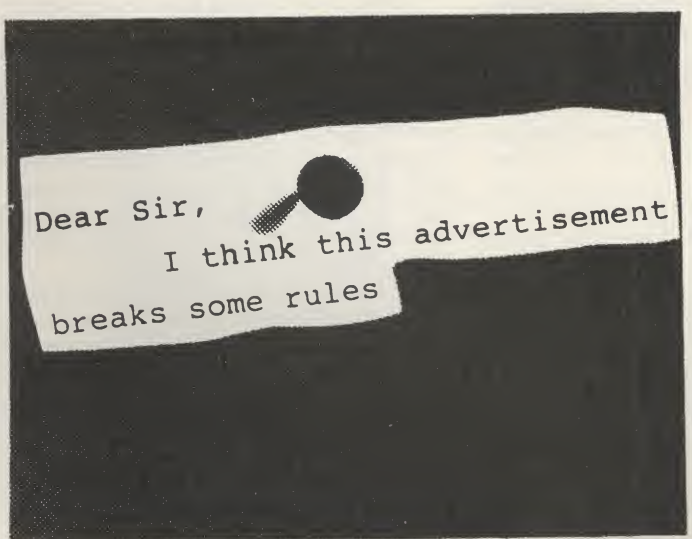
The very worst problem with the book as I have hinted at is the layout. Someone has got hold of the idea that grouping the commands together e.g. into graphics, loops etc. is a good idea. As far as I can see, and also asking around it seems to be a general opinion, that this method of book layout is totally useless to the programmer. As I have said, the book is not for the beginner, so a programmer will want to find a command as qickly as possible, so a simple alphabetical system is what EVERYONE needs. I found that I was flipping the manual to the main index for almost every command. The only thing that the manual has going for it is that it is a ring binder, so that it would be possible to reorganise it in a more logical manner, but the index would be useless. It is a bit of a no win situation.

GFA Basic is fine for anyone who has been using it on another machine, but it is very awkward for the beginner or to the newcomer of GFA, so I would hope that in future there will be a few books aimed at the beginner more, in the use of GFA Basic.

Conclusion

GFA BASIC is a very good product, even when you take the few problems that I found into account. The timings that are listed at the end of this review are a fair indication of the efficiency of the interpreter, as it is a very standard Mandelbrot plotter, translated as closely as possible from the Amiga, and as you can see the speed is respectable. The editor is superb, just about the best built in editor that I have ever used. The price, well surprisingly it is £65, which is very reasonable indeed.

Time to generate a 550 by 199 mandelbrot plot
X range of 1.5 to 2
Y range of 1.4 to 1.3
with a max. if 16 iterations per point
AmigaBasic 163 mins
GFA Basic 44 mins
for this case GFA Basic is approx 3.7 times faster than Amigabasic.



Advertisements are expected to conform to rules and standards laid down by the Advertising Standards Authority. Most do. The few that don't we'd like you to write in about.

And if you'd like a copy of these rules for press, poster and cinema advertisements, please send for our booklet. It's free.

The Advertising Standards Authority.
We're here to put it right.

ASA Ltd., Dept. Y, Brook House, Torrington Place, London WC1E 7HN

This space is donated in the interests of high standards of advertising.

The U.K. Amiga User Group

Are you new to the Amiga, finding it difficult to harness the power of this amazing computer ?, then what you need is help from the largest group of Amiga enthusiasts in the world outside of the United States.

Members receive:

- Excellent discounts on software
- Technical support and on line help
- Superb hardware reductions
- A bi-monthly newsletter of over 60 pages!
- Access to a PD library of over 250 disks
- Use of an Amiga only bulletin board

DON'T HESITATE - JOIN NOW and start to appreciate what Amiga computing is all about.....

For further details write, enclosing a stamped addressed envelope to:

The U.K. Amiga User Group,
66, London Road,
Leicester. LE2 0QD.

Or Telephone - **Leicester (0533) 550993**

NEW SOFTWARE ARRIVING DAILY PHONE NOW!! BUSINESS & UTILITY SOFTWARE AVAILABLE:

MURDER!

WE SPECIALISE IN SOFTWARE IMPORTS WHY WAIT MONTHS FOR SOFTWARE YOU CAN ORDER NOW Mail Order Prices Only

All Computer Prices are being savagely slaughtered!!!

Phone NOW for amazing deals: 01-760 0274

HARDWARE

A500 + TV Modulator	£355
1084S Monitor	£249
A600 + 1084S	£569

Full range of hardware available — New and secondhand

Quickshott II Turbo 8	£8.95
Pro 5000	£11.00
Starprobe	£11.00
Disk Box 120 PCs	£9.50
Mouse Mats	£4.50
10 Blank Discs (3.5)	£12.50

SOFTWARE

£13.50

Afterburner
Bombjack
Chuckie Egg
Crazy Cars II
Double Dragon
Espionage
Firepower
Flying Shark
4x4 Racing
Geurrila Wars
Galactic Conqueror
Hellbent
IK+
Menace
Mini-Golf
Pacmania
Return of the Jedi
Spitting Image
Techno Cop
Trivial Pursuit II
Ultimate Golf
Wanted
Zoom

£15.95

Amiga Gold Hits
Archon Collection
Alien Syndrome
Art of Chess
Battle Chess
Bombuzal
Bards Tale 1
Bards Tale 2
Corruption
Carrier Command
Captain Blood
Collosus Chess
Chessmaster 2000
Dungeon master (1 meg)
Daley Thompsons
Elite
Fusion
Ferrari Formula One
Firezone
Fish
Fernandez Must Die
Gunship
Garrison II
Heroes of the Lance
Hostages
Interceptor
Iron Lord
Joan of Arc
Legend of the Sword
Lombard RAC Rally
Manhattan Dealers
Mortville Manor
Mindfighter
Nigel Mansells' Grand Prix
Operation Wolf
Obliterator
Puffy's Saga
Pools of Radience
Powerdrome
President is Missing
Roger Rabbit
Space Harrier
Speed Ball
Starglider II
Superman
Starray
Thunderblade
World Tour Golf
Zany Golf

£19.50

Chronoquest
Dreamzone
Falcon
Hybris
King of Chicago
Rocket Ranger
Sword of Sodan
T.V. Sports Football
Three Stooges

£49.50

Deluxe Photolab
Deluxe Video
Deluxe Music

SECONDHAND BARGAINS

1084 Monitor	£210
A500 + Modulator	£300

WANTED DEAD OR ALIVE
A500S Monitors etc.
GOOD PRICES PAID

NEW RELEASES:- AMIGA

£6.50

Excalibur
AB 200

£13.50

DNA Warrior
Baal
No Excuses
Fourth & Inches
LED Storm
Deflector
Galdregons Domain
Emmanuel
Motor Massacre
Dugger
Advanced Ski Simulator
Live & Let Die

£15.95

Kennedy Approach
Space Quest 2
Breach
Paladin
Gauntlet 2
Batman
Hotball
Scary Mutant
Victory Road
Joan Of Arc

AMIGA

512k EXPANSION BOARDS (With Clock)

£99inc. VAT

UNREPEATABLE SPECIAL OFFER

SPECIAL OFFER
Dragon's Lair . . .
. . . £29.95

01 760 0274

Type of Computer:.....

PLEASE SEND ME THE FOLLOWING ITEMS:

ITEM: **AMOUNT:**

POST + PACKAGING_____
TOTAL:_____

Name:

Address:

Telephone:

Full range of Hardware & Software for all popular machines at discount prices. Cheques & postal orders made payable to: SABRE SIXTEEN, 7 Park Street, Croydon; Surrey CR0 1YD.

Prices include p&p within the U.K., Europe Please add £1.00 per item. Hardware (U.K.) please add £5. Hardware (Europe) please add £10.

Superplan

Good business planning can spell the difference between boom and bust. Peter Lee takes a calculating look at a new spreadsheet.

Businessmen are a pretty cautious lot; they have to be if they intend making a living in a marketplace peppered with pitfalls. Any software they buy has to fit their needs as simply as possible, be robust enough to carry out a variety of specialist tasks, and generally help them towards profitability and good management. They are also sticklers for reliability: a proven track record means a lot in a business where image matters.

Precision Software have already earned a solid reputation for themselves through their Superbase programs. In fact Superbase Professional is considered to be among the best dedicated databases for the machine at any price. Now the Surrey-based firm have released a further program in their range, Superplan, a combination spreadsheet, time management and business graphics utility.

This is a solid workmanlike tool aimed right at the heart of a business - the books. Although some mention of home finances is made, this program will sit squarely on any small businessman's desk (or the desk of his financial controller) with the time to learn its finer points.

The program is supplied on an unprotected disk, but to run, it requires a small, sealed, hardware dongle to be present in joystick port 2 at all times. Annoying, but a simple enough anti-copying device allows backups of the disk to be made and used with the attachment fitted.

Superplan needs at least 1 megabyte of memory to run, and the spreadsheet lay-out has 2048 rows by 1024 columns; the screen acts as a small window over this vast area, the cells being made to scroll horizontally and vertically as needed.

While the program fulfills all the standard requirements of a spreadsheet, it offers a far wider scope than simply number manipulation. It also boasts a superb time-management facility, an integral database of sorts (using the same spreadsheet lay-out), and excellent graphic representation in a number of forms of the data contained in the cells.

Each of these functions share the one sheet - one corner can be used for financial concerns, another area for staff information, and so on; like some giant, sophisticated (and very smart) wall planner, your entire office management can be contained in one file if you wish.

To manage efficiently, the best information has to be to hand, and resources have to be optimised - this may sound like business-speak, but the ability to plan and cost staff assignments or improvement projects, forecast revenue, estimate the number of men per job, or offset the cost of new equipment against increased profits, makes sound sense.

The ability also exists for locating a critical path through a job and basing your actions on it (as a simple example, there is little point having a painter arrive at a location until after the joiner has finished the woodwork; Superplan will help beat this kind of problem).

Most of you will be familiar with the form that spreadsheets take - insert text or data in a cell, and then by specifying an evaluation in another cell, perform a mathematical function on sets of data already entered. In this way costings can be quickly worked out if the price of a particular product rises, or if the rate for the job goes up; a simple alteration of the relevant figure, a recalculation of the data, and any cell which uses the edited data is updated to mirror the change in global terms.

Actually using the spreadsheet requires the use of special commands, which have a language all their own; it is not an easy task to get to grips with the program's finer points, so the well-designed manual is a big plus.

Help information is available at any time, and is comprehensive and much-needed in the early days. Some functions are available from an on-screen menu via the mouse, but in the main the keyboard is used.

The screen display can have from 2 to 16 colours, and this becomes important when dealing with the program's biggest asset, graphs.

While a row of figures may mean a lot to many people, seeing the data represented as a graphic chart is usually quicker at getting a point across, and Superplan has several options for displaying data. They range from the ordinary bar graph to the exploded pie-chart, and all can be tailor-made for best results. Provided the memory is available, these images can either fill the whole screen for presentational purposes, or more usually occupy a re-sizable window overlaying your work sheet.

The range of data to be included in the graph is defined by commands on the sheet itself in a kind of programing language; the options are wide-ranging and extremely powerful, and one of the program's chief attractions for me. However, some practice will have to be undertaken before good results can be obtained.

Ten fonts are supplied for adding the legends to graphs, in a number of sizes, and you may even specify the line weighting, and add specialist symbols. The program also supports a wide range of printers and plotters for hard-copy, and can be made to print wide spreadsheets sideways down the paper, which is a nice touch.

The Database functions rely on the same kind of programing criteria as the spreadsheet (referencing data by rows and columns), and are only really useful where some kind of numeric information is available which can be manipulated in either the context of graphics or spreadsheet operations.

Superplan is able to support ARexx, which gives it compatibility with data from other programs similarly integrated; in real terms this means you can draw on data from Superbase Professional and use Superplan's graphics commands to display the information. Data from Lotus 1-2-3 and dBase is also compatible.

Rounding off the program is the ability to create an application through the use of macro commands for automatic execution.

Commands are entered in the worksheet in the same way as text, and their use can be tailored to meet many needs - inputting of data in response to prompts and so on - in fact the many repetitive actions which can be so tiresome.

Conclusion

Superplan is much more than a spreadsheet, but its added features bring a degree of complexity which can be a hurdle to some users. It seems the more powerful an application, the greater expertise it demands. Having all the facilitie available in one giant worksheet is a tremendous idea, and a big selling point for the small businessman wanting to get the most out of a piece of software. This is a first-class package in all respects, provided you have some time to invest in mastering it. At just short of £100 it represents good value. But I do have an aversion to dongles, because once you have more than three you can get them mixed up; they are prone to falling on the floor and getting hoovered up (yes, it actually happened to me) or simply mislaid; losing one is like forgetting the combination to the safe - panic sets in and the data is useless. I can see the need for protection, but something more humane please!

P.L.

AMIGA HARD DRIVES

Incredible Value

20MB £399.95*

40MB £599.95

60MB £699.95

* This is NOT a printing error!

DIGIPRO

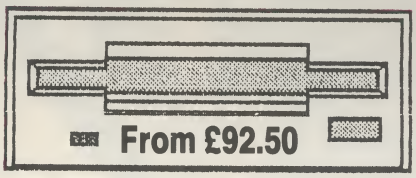
LISTING PAPER
PRINTER RIBBONS
JOY STICKS
DUST COVERS
MONITOR/TV LEADS
GENLOCKS
PRINTERS
MODEMS
AMIGA A500 CONSOLES
FLICKER MASTERS
MOUSE MASTERS
PLUS MUCH MORE

PUBLIC DOMAIN DISKS
ONLY £2.50 EACH
PD CATALOGUES - £2.00

Printer Cables £7.99

VIRUS INFECTION PROTECTION
The BEST protection your disks could ever wish for! £31.95

3.5" External Drives



From £92.50

3.5" DS/DD Disks 10 for only £9.95

DIGIVIEW GOLD £129.95
HIGH QUALTY DIGITISING CAMERAS FROM - £225.95
DIGITISING STAND WITH LIGHTS - £69.95

(0703) 703030

SOUND SAMPLERS ONLY
£29.95
Including Software

AMIGA A500

6 Free games, joystick, Art program, 20 PD programs and personal training course

£415.00

NEW!!

MOVIE SETTER £69.95
PRO VIDEO PLUS £249
VIDEO EFFECTS 3D £159

DIGIPRO LTD

Enterprise House, Howards Grove, Southampton SO1 5PR

Locking Disk Boxes
Holds 100 Disks
£7.99

FANTAVISION
£39.95

A500 CONSOLES
ONLY - £39.95

VISA

All Prices INCLUDE V.A.T.
Orders over £50.00 Postage and Packing FREE!
All other orders add £1.00 for Postage and packing
For prices outside UK please telephone

Access

Firebird

A long time ago, in a galaxy far away... It had been one of those days. The Galcop had just fined me 5000 credits for trading narcotics with a civilised nation, and the hyperdrive motors were mumbling trouble again. So when I left the Coriolis station at Lave - cargo hold brimming with computers - I had a Monday morning sort of feeling. Maybe, I thought, those felines over at Reorte would give me a good price - if I made it past the local terrorists.

I hit the hyperdrive for the third time that day and the engines howled into life. Ten seconds later I felt myself thrust into witch space. It was an uncomfortable feeling, rather like floating in a bath or warm slime -almost, but not quite, pleasant. Five years spent swanning around the galaxy and I still wasn't used to it. The drives slowed to a halt and the radar confirmed my arrival in Reorte's system. There was always a feeling of relief on dropping out of witch space, it was the sort of place where one could get hijacked by the ruthless insectiod Thargoids, and just recently there had been a spate of such attacks.

Lining by Cobra with the planet -now just a distant smudge - I hit the local space jump. The ship accelerated in a instant to a little under light speed and jerked to a sudden halt. Pirates! A quick glance at the radar confirmed my suspicion. Three of them, two Kraits and a Mamba coming in fast. This is going to be fun, I thought as I watched the first trying to duck a Lance-Ferman hunt and kill missile. No ECM, no chance - the pathetic creature got his reward right up his machine's exhaust port. Just as the computers registered my kill with the Galcop, the second and third vanished amongst the rain of my pulse lasers. Rewarded by a measily 1.4 credits for the three, I reckoned on not trying to make it as a bounty hunter.

Some time later I started my approach to the station at Reorte. As I prepared for landing, I was confident of a good profit, until the sound of laser fire echoed off the bow. The Cobra's aft shields buckled under fire from the unknown assailant. I hit the retros, and the craft shot back at frightening pace, just far enough to spot - a Thargoid. Only these foul creatures would ever dare attack a trader so close to a space station. I launched a missile -too late the Thargoid had ECM - all I could do was wait for the inevitable and join the struggle in another life...

This is the story of a trader trying to become a member of the Elite. Reckoned to be the best space game ever devised for the 8 bit machines, it all started on the BBC Micro some six

years ago, devised by two university students Ian Bell and David Braben, who later went on to write Zarch on the Archimedes more recently renamed Virus when it appeared in 16 bit form. In those days, the game was the first to feature moving 3D graphics - albeit wireframe - and a real seat of the pants feeling.

If you have never come across Elite before, all this must be leaving you feeling a little confused. You take on the part of a simple soul, fresh out of pilot training. Equipped with nothing more than a clapped out Cobra MKIII spaceship. From here you must trek into the galaxy and by careful interplanetary commerce, enrich yourself, and equip your ship with new weapons. There are over 10,000 planets so you have plenty to choose from.

On the way, you will have to defend yourself against pirates, rogues, thieves and vagabonds and eventually go on missions to save the universe. All of this will set you apart from the usual space flotsam, and you will if you stay alive become one of the most revered space captains - a member of the Order of Elite.

"Trading with planets who will buy such goods can produce great rewards, but they tend to be surrounded by mean pirates"

There are two ways of doing this: legally, by trading in goods like computers, clothing machinery and so on. Or illegally, by the get-rich-quick method of trading in slaves, firearms and narcotics. Criminals are not well like in the galaxy and there is no honour among thieves. Trading with planets who will buy such goods can produce great rewards, but they tend to be surrounded by mean pirates. Some of them Elite traders who have turned to a life of crime. Also, traders who break the law are marked by the Galcop and can find themselves shunned by the law-abiding planets and refused entry to the systems.

Games like Elite are now almost commonplace, and wireframe 3D is all but unheard of. These days we thrill to the delights of solid 3D graphics in games like Carrier Command and Jez San's superlative, Starglider II. So how well does the conversion of Elite fair against such giants?

The most obvious thing is the solid graphics. Good as the original looked, wireframes on a 16 bit machine cannot be deemed credible. Also, all of the status/trading screens feature some use of graphics. Fans of the original game will no doubt notice this. In addition there are some features, like the Retro thrusters and Cloaking device which never appeared in the original game.

Oddly enough most of the new features do not appear in the supplied instruction manual or key guide either so quite how you operate them is beyond me.

Players of the original will recognise the screen layout at once. The top half of the screen being occupied by the front view, the lower forming the instrument panel and radar screen. The instruments straddling the radar are as follows: front and rear shield power, cabin temperature, laser temperature, fuel gauge, altimeter, missile control, speed, roll, climb, and four power meters. The radar itself takes up most of the lower display.

Here, all objects in the local area appear with the exception of large bodies like planets. The system employed is unusual but well thought out. The radar screen is essentially just an ellipsoid. Dots appear on the screen indicating the positions of objects relative to the ship. If an object is above or below the ship, the radar traces a line above or below the ellipse.

Control, as in the original is by keyboard or joystick, with the mouse a welcome addition. This is to do with the way the game works. Everything in Elite's 3D space has only two degrees of freedom. This means to turn around you have to rotate the ship through 90 degrees and pull back of the joystick - fighter pilots call this a brake turn.

"The experts - I almost made it to Elite, but wore the disk out trying - will find themselves surprised by how hard the new version is".

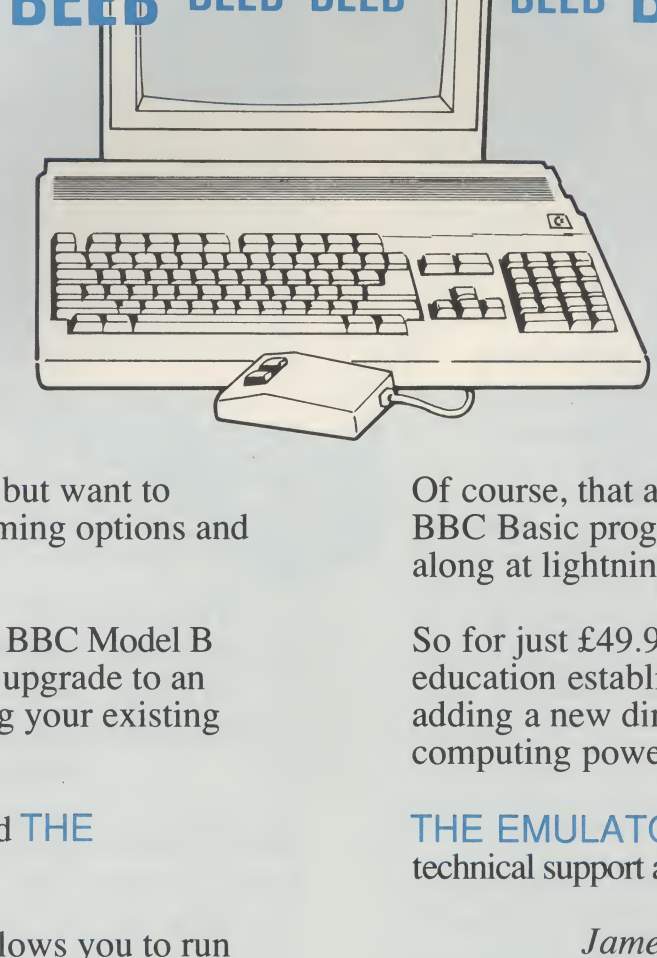
In play, the beginner Elitist, will find himself bemused by the sheer variety of controls and larger number of ways to die. The experts - I almost made it to Elite, but wore the disk out trying -will find themselves surprised by how hard the new version is. This is a problem; of the first four games I had, I was attacked and killed by Thargoids - the meanest of the mean - in two, before managing to dock once. In my opinion it is too hard. When you do get started, Elite plays quite reasonably, but it looks dated for all of its fancy graphics and new options.

The new version just does not feel like a 16 bit game, more of an excuse to capitalise on the success of its predecessor. Little touches like the Blue Danube played during the docking mode are nice, but don't add a lot. The tendency to crash rather too often is annoying. It even has a cheat mode. Hint: type SARA when prompted for a word, then press * while docked.Try it, even buy it - but if you hate it, do not say I did not warn you.

J.F.

Sound: 5
Graphics: 5
Playability: 5
Overall: 6
Price: £29.95

Now the Amiga makes a new noise.



You've got an Amiga but want to expand your programming options and your software base.

Or maybe you've got a BBC Model B computer and want to upgrade to an Amiga without making your existing software redundant.

In either case you need THE EMULATOR.

THE EMULATOR allows you to run programs originally written for the BBC Micro on a Commodore Amiga. In some cases they'll run seven times faster than on the machine for which they were intended.

Of course, that also means your own BBC Basic programs will also whizz along at lightning speed.

So for just £49.99 (or £39.99 to education establishments) you could be adding a new dimension to your computing power.

THE EMULATOR includes hotline technical support and is available from:

James Associates
6 Hazlitt Mews
London W14 0JZ
Tel:01-603 3313

Order by Access or send in the coupon.

Please send me ..... copies of THE EMULATOR at £49.99 (inc VAT) each plus £2.00 P&P

Name:
Address:

Postcode: Tel:

Commodore

CALCULATING AMIGA

Stuart Williams looks at an unusual use for Amiga Basic

The Amiga has one of the most powerful BASIC languages available today, yet many programmers ignore its capabilities to head straight for C or Assembler. For those of us with less than a few years of spare time to learn programming, the excellent Amiga version of the ubiquitous Microsoft BASIC can provide a quick and effective solution for many jobs.

The application of AmigaBASIC to one of my other hobbies, Amateur Radio, is a case in point. AmigaBASIC contains all the mathematical functions necessary to calculate, for instance, the distance and direction of another radio station which I have contacted, to simply and quickly enable the output of specifications for a specialised aerial system for a particular wavelength of transmission or reception, to indicate the values of components required for a particular design of electronic circuit, and even to predict the track of a satellite in orbit around the Earth!

With AmigaBASIC's powerful windowing Intuition–based WIMP environment, the experienced BASIC programmer will have no trouble in producing useful applications programs with a minimum of fuss. Even the inexperienced should find it simple to convert previously written programs from the older generation of 8–bit and IBM compatible computers, many of which use a less sophisticated version of Microsoft BASIC.

A word of caution, however – although the BASIC is excellent, the manual is far from perfect! I would recommend those new to the Amiga to purchase one of the excellent AmigaBASIC tutorial books on the market (see recommendations below) before doing much work with the language. In addition, a particularly useful book for the radio user is Amateur Radio Software by John Morris, which contains many useful listings and much technical information for programmers and radio users – it is essential reading. The basic calculations shown in the listings here were adapted from standard formulae included in this book.

While there is not space for listings of the more sophisticated applications which the Radio Amateur or Shortwave Listener may find useful, I have included two small programs to show what can be done without wearing your fingers out! These are 'quick and dirty' applications, which could be enhanced considerably in terms of user friendliness – the Amiga's speciality. If you feel like adding a few frills for the fun of it, how about a graphical display such as a world map?

"These are 'quick and dirty' applications, which could be enhanced considerably in terms of user friendliness – the Amiga's speciality."

The first program (listing 1) is designed to calculate the Great Circle distance and bearing from your location to that of a long–distance radio station which you have either contacted via your radio transceiver, or have heard on your communications receiver. A 'Great Circle' is the shortest line along the Earth's surface between two points, ie you and the distant station. The items of data which you need to input in order for the program to make the necessary calculations are LATITUDE (north or south of the equator) of your location and that of the distant station, and likewise LONGITUDE (east or west of the Greenwich Meridian). From this, the program returns the great circle distance and bearings. The program uses standard formulae, but since it assumes that the Earth is perfectly spherical (which it is not!) it has a distance error of 0.5%, which is acceptable in most circumstances.

The subroutine Calc.Data contains the actual calculations, and based on the positions and calculating in radians, it is possible to produce the angle subtended by the two points at the centre of the Earth, using AmigaBASIC's COSine and ATN (ARCTANGENT) functions. This central angle, multiplied by the Earth's radius, gives the great circle distance between the two points or stations. The great circle bearing, or azimuth, is output in degrees converted from radians. This type of program can be very useful for lining up a rotating beam aerial for maximum signal strength with a distant station, and saves a lot of messing about with a calculator!

The second program (listing 2) enables a given Geostationary satellite position given as longitude (in degrees west) to be manipulated to produce the azimuth bearing and elevation of the satellite from your location, in order to align your receiving aerial correctly.

A geostationary satellite is one which takes exactly 24 hours to complete one orbit of the earth, and thus appears to be 'hovering' above one particular spot on the planet's surface. The geostationary orbit is popular for tv and communications satellites, since its apparent lack of motion means that, for instance, a satellite TV dish does not need to track the satellite, and you do not lose your picture as the satellite goes beyond the horizon!

Subroutine In.data asks for the satellite longitude in degrees west. Subroutine Calc.Result calculates the great circle angle between your location and the sub–satellite point. If this angle is too big, the satellite will be below the horizon, so you are out of luck! A suitable message is printed to indicate this.

"There are many more applications in radio to which you can turn your favourite computer, or indeed in any other hobby or application requiring calculations, such as astronomy, engineering, building, surveying..."

Assuming that the satellite is not below the horizon, then the azimuth and elevation are calculated, and, having been rounded to the nearest number of

continued on page 70

continued from page 69

whole degrees, are output to the screen in subroutine Out.data.

This simple but effective program has many applications, the obvious one being satellite TV, but many of you may not realise that Radio Amateurs or 'hams' are able to access their own satellites, uploading and downloading information and messages – however, many of these satellites are not geostationary, and calculation of their position at any one time becomes necessarily more complex.

Just a brief introduction, then, to a few of the possibilities of using your Amiga to help you in the hobbies of Amateur Radio and Short Wave Listening, and perhaps to provide a challenge to get you using the programming language provided free with every Amiga – AmigaBASIC! There are many more applications in radio to which you can turn your favourite computer, or indeed any other hobby or application requiring calculations – after all, that is what computers were invented for! Why not have a go, and put some purpose into your computing?

RECOMMENDED BOOKS

Title

AmigaBASIC Inside and Out
Hannes Rugheimer,
Christian Spanik

The Amiga Microsoft BASIC Programmers Guide
William B. Sanders

Amateur Radio Software
John Morris

For information on Amateur Radio, contact:

Radio Society of Great Britain, Lambda House, Cranborne Road, Potters Bar, Hertfordshire EN6 3JW

```
REM Listing 1
REM Distant Radio Station Great Circle Bearing and Distance

PI=3.14159265#: DegRad=PI/180
DEF FNA(X)=INT(X*10+.5)/10

Home.Station:
CLS
PRINT  "Input Location Data for Home Station or Listening Post"
PRINT "Text input should be in Upper Case": PRINT: PRINT
GOSUB In.Data
HN=N: HE=E

Distant.Station:
PRINT: PRINT
PRINT "Input Location Data for Distant Radio Transmitting Station"
PRINT:PRINT:PRINT
GOSUB In.Data
GOSUB Calc.Result
PRINT  "Great Circle Distance =";FNA(Distance),"Bearing=";FNA(Bearing/DegRad)
GOTO Distant.Station

In.Data:
INPUT " What is the Latitude in Degrees";Degrees
INPUT " and Minutes";Minutes
INPUT " Is it North or South";Direction$
N=(Degrees+Minutes/60)*DegRad

IF LEFT$(Direction$,1)="S" THEN N=-N
INPUT " What is the Longitude in Degrees";Degrees
INPUT " and Minutes";Minutes
INPUT " Is it East or West";Direction$
E=(Degrees+Minutes/60)*DegRad
IF LEFT$(Direction$,1)="W" THEN E=-E
RETURN

Calc.Result:
CO=COS(HE-E)*COS(HN)*COS(N)+SIN(HN)*SIN(N)
CA=ATN(ABS(SQR(1-CO*CO)/CO))
IF CO<0 THEN CA=PI-CA
Distance=6367*CA
SI=SIN(E-HE)*COS(N)*COS(HN)
CO=SIN(N)-SIN(HN)*COS(CA)
Bearing=ATN(ABS(SI/CO))
IF CO<0 THEN Bearing=PI-Bearing
IF SI<0 THEN Bearing=-Bearing
IF Bearing<0 THEN Bearing=Bearing+2*PI
RETURN
```

continued on page 83

PD – FREE GRATIS AND PRACTICALLY FOR NOTHING

Stuart Williams chats with Chet

This month, I'm reviewing a disk imported as a 'Jumpdisk' special, provided by George Thompson Services. The disk, the 'Chet Solace Shareware Extravaganza' is a remarkable selection of twenty-six of the best Shareware and Public Domain programs discovered by Chet Solace on the American bulletin boards last October. According to George Thompson Services, the disk contains about 1.5 megabytes of software and documentation, laid down in a highly compressed self booting format.

While there isn't enough space here to discuss all twenty-six programs, I've chosen four of the best of them to discuss in some detail here.

Pointer Animator

Now this is what I call a real fun Amiga program, which enables you to add a customised feel to your Workbench! Pointer Animator is, of course, a pointer animator! The program enables you to replace your standard Workbench pointer by substituting its own custom pointer and then rapidly cycling the a selection of pointer images to produce animation, and it is really effective. How would you like a pointer in the form of a wriggling snake, an exploding volcano, a 'Boing' ball, or even your own animated company or club logo?

How is all this created? Well, the image sequences are standard Amiga IFF ILBM graphics files. This means that you are able to edit both predefined animation files as well as creating your own. In addition to the normal three colour pointer provided by the standard Workbench, the pointer animator also supports the use of a fifteen colour pointer! This enables creation of some extremely effective graphics, as you can see from the selection of twenty-four predefined animated pointers which are provided on the disk.

Frames can be created and edited in Electronic Arts' 'Deluxe Paint II' or any similar graphics program which can be set up with two or four bit planes (four or sixteen colours), and is able to save rectangular brushes from one to thirty-two pixels wide and high in IFF ILBM file format. A feature which would also be very helpful in the chosen art program is the ability to display the X,Y co-ordinates of the drawing cursor, to enable accurate pixel positioning.

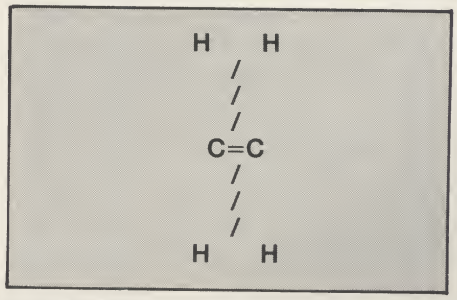
This program is not only a lot of fun, but gives you the opportunity to exercise your creativity and have a laugh at the same time. Perhaps the budding Leonardo's amongst you would like to try an animated series of great paintings or cartoons? Highly recommended!

Pointer Animator is Shareware, with a recommended donation of between $10 and $20 if you make regular use of it, to be sent to the author, Tim Kemp, at PO Box 23101, Columbus, OH 43223, United States of America.

MicroView

A little something for the science students or teachers amongst you now - MicroView is a remarkable three dimensional molecular modeller that, while it won't give Sun Workstations much to worry about, could prove a very useful educational tool for demonstrating molecular structure in a graphical form.

If you look at through chemistry texts, you'll find many two dimensional diagrams intended to represent the structure of a molecule like this:



cont. on next page

PD PD PD PD

While conventional notation, this is hardly inspiring! MicroView, running in 320 x 200 Interlace Mode (effectively 320 x 400 pixels resolution), gives you the capability to examine structural molecular models in colour and three dimensions!

A number of predefined molecules are provided to demonstrate the program, each one when double clicked running MicroView and loading itself. These include Ethane, Sulphur Hexafluoride, Ethyl Alcohol, Sulphuryl Chloride, Sodium Chloride, Boron Tetrafluoride, and Iron Pentacarbonyl.

The great thing about MicroView is of course that it enables you to create your own molecular models, from data files created in an ordinary ASCII text editor. Full details of the file format are provided in the documentation on disk, and all it requires is a little knowledge of geometry and, naturally, chemistry, to set up. The program is invoked from the CLI (although molecules can be displayed from the Workbench), and supplied with the filename of your molecular definition file (denoted by the file suffix .MOL), like so:

1›MicroView Ethyl-Alcohol.MOL

The structural model of the molecule is shown in the upper 75% of the screen, in the form of a series of linked coloured balls. The control panel, which is located in the lower right corner of the screen, contains buttons which, when clicked on by the mouse, enable you to manipulate the molecule and perform special functions, including rotation of the model in X, Y and Z axes, and its speed of rotation.

Options are available to EXIT from the program, show the FULL SCREEN (hitting the left mouse button recalls the control panel), display the LEGEND (indicating which coloured ball represents which element), to RESET the molecule to its original position, and to STOP the molecule in its current position. An RND function to enable random rotation of the molecular model for demonstration purposes has not been implemented yet, but this will not be greatly missed.

I like this program. In the right hands it could be a useful educational tool, as well as being pretty! Once more the Amiga shows its practical ability to be used in the real world as well as the world of entertainment. Highly recommended to all Amiga owning chemistry studenst and teachers.

MicroView is Freely Redistributable (alias PD) and was written by Guy Wilson Kwok of the United States of America.

Weather Man

This is, would you believe it, a program to forecast the weather! Perhaps the Met. Office should be using Amigas? Seriously, though, the program is based on general scientific principles, some of which were first used in a Public Domain program for the Commodore 64, "Weather Forecaster", by George Mitter. While it won't turn you into Michael Fish (or even Fred Fish!), you could have some fun betting on the weather with your friends using it!

To use Weather Man, you will need a barometer and some means of finding the wind direction (the author suggests weather vane, fancy electronic instrument or wet finger!). Simply enter the information you have gathered into the program by clicking on the appropriate gadget boxes, which include a sliding gadget for barometric pressure, gadget boxes for pressure Rising Fast, Rising Slowly, Steady, Falling Slowly, and Falling Fast, plus wind direction from N, NE, E, SE, S, SW, W, and NW. One the data has been entered, simply click of the Forecast gadget to receive your weather forecast!

I can't vouch for Weather Man's accuracy, and I would have liked to see documentation of the principles involved included, but as a bit of fun it has possibilities.

Weather Man was written by James David Walley, and is Shareware, copyright (c) 1988 by Bit Player Software of Everett, Washington, USA.

ShoWiz

ShoWiz is definitely one for the video buffs or demo creators -it is a slideshow, but what a slideshow! It enables you to display individual pictures, or whole disk full if you like. There are twenty-three ways to display your pictures with this program, and it works with pictures created in ALL resolutions, including overscan, which is essential for video work. It is even possible to get ShoWiz to display text files with your choice of text and background colours plus shadows.

While ShoWiz can be used single pictures, text files, or a directory full of such files from Workbench, there is no doubt that the program is at its best when controlled by script files executed from the CLI. These text files contain details of the file required to be displayed, the length of time to display, and the type of wipe to be used. However, if you merely want to display a whole disk full of pictures and don't want to be bothered with details, the program will display every file available and cycle through its wipe effects for thirty seconds each.

The wipe facilities are as follows: simple screen display; display file in five blocks in the order 15324; checkerboard wipe; scroll picture in from the top; display and enlarge 4x; fade in from black; grow from the centre of the screen to its corners. Start in the middle, wipe half of the picture to the right, the other to the left; display then invert; scroll in from left and right and join in the centre; display in four blocks; scroll from left to right; mix screen up into a puzzle then solve it; display from the centre, scrolling half up and half down. Pull the picture down from the left hand corner; display and shrink to a quarter size; scroll from right to left; display in strips; make the picture trail to the right, then left then right again then left. Scroll picture from bottom to top of screen; reverse the picture; expand the picture from its centre; and an option called 'weird', which I haven't yet tried!

As you can see, this is fairly comprehensive! Combined with an overscanning graphics program and a large text TV title generator, would be a real boon to the budding TV producer, or for presenting promotional graphics in business or education. Highly recommended.

ShoWiz was written by J.L.White of the USA, and is Shareware, copyright 1988 by Merlin's Software. Donations of $10 are welcome, $15 will bring a disk of picture samples plus the latest version of ShoWiz.

These are just four of the programs on the disk; there are many more. The Chet Solace Shareware Extravaganza is undoubtedly a bargain at £4.99 including P&P. ***S.W.***

Supplier: George Thompson Services, Dippen, Brodick, Arran, Scotland, KA27 8RN.

Mirrorsoft Skychase Competition

Sometimes dreams come true ... For Jeremy Marshall an Amiga User International competition sponsored by Mirrorsoft did just that. At 14, Jeremy is already flying mad. He had dreamed of learning to fly with the eventual aim of becoming a professional pilot, probably in the RAF. So when his father, a longtime reader of AUI offered him the chance to enter AUI's Skychase Competition he jumped at it and his dream came true when his all correct entry was drawn as the winner.

The prize was a course of flying lessons giving him a chance to have his dream come true.

The first took place on a bright winter's day at Cranfield Airport, a small private airfieldnear his home. He spent a full hour zooming around in the single engined Cessna and clearly loving it. Normally a quiet boy, according to his delighted parents, he was bubbling when he came down and was presented by Mirrorsoft's glamorous PR lady, Cathy Campos, with some other Mirrorsoft/Skychase goodies.

If in a few years time you are flying across the Atlantic and you hear a voice say "This is your pilot, Captain Marshall speaking", you will know that sometimes dreams do come true...

ROBSON ELECTRONICS

Newcastle House, High Spen, Rowlands Gill, Tyne & Wear, NE39 2BL

ROWLANDS GILL (0207) 543053 FAX No. (0207) 542769

"TOP QUALITY, BEST PRICES!"

AMIGA STEREO SOUND KIT — Only £9.95 *POST FREE !*

Do you want to get the best from your Amiga's amazing stereo sound? Are games and music spoilt by the feeble speaker in your monitor or TV?

Perhaps we can help. We can supply you with a product called the Amiga Stereosound kit. Now you can connect your Amiga 500 to virtually any Hi-Fi or stereo system for incredible true stereo sound. It's simple really. Your Hi-Fi or stereo will amplify the sound and play it through its own stereo speakers. Our complete package includes special connection leads and interchangeable adaptors that simply plug into your Amiga and Hi-Fi.

Also includes adaptors to connect any stereo headphones, so you don't HAVE to blast everyone's eardrums when you are blasting aliens. Perfect for games and music packages, unleash the stereo music power of your Amiga! The ultimate accessory for perfect sound quality.

AMIGA EXTERNAL DRIVE SWITCHER — Only £9.95 *POST FREE !*

A switched connector for external disk drive, simply flick the switch and reset to disable your extra drive. Some programs will not work with extra drives connected, this useful product will save you the hassle unplugging, and prevent damaging the connectors on your system. No soldering required, simply plug in between external drive and computer. Essential for trouble free computing.

AMIGA JOYSTICK / MOUSE PORT EXTENDER — Only £14.95 *POST FREE !*

Sick and tired of fumbling around behind your Amiga to plug in your joystick? Then you need the Joystick/Mouse Port Extender! It extends the mouse/joystick ports to the front of the computer for easier access, and includes bracket for mounting the extended sockets at a more convenient location.

AMIGA STEREO HEADPHONE ADAPTOR — Only £5.95 *POST FREE !*

Do people complain about the noise when you play games? Then perhaps you should buy our headphone adaptor! It will connect stereo headphones to your Amiga and is suitable for use with any headphones with a ¼ inch plug. An extra adaptor is available for 'Walkman' type headphones at £1.50

OTHER PRODUCTS

AMIGA 500 DUST COVER	ONLY £ 4.95 *POST FREE !*
AMIGA 1000 DUST COVER	ONLY £ 7.95 *POST FREE !*
AMIGA 2000 DUST COVER	ONLY £ 9.95 *POST FREE !*
KONIX SPEEDKING JOYSTICK	ONLY £ 9.95 *POST FREE !*
KONIX SPEEDKING JOYSTICK (A/F)	ONLY £10.95 *POST FREE !*
KONIX NAVIGATOR JOYSTICK (A/F)	ONLY £13.95 *POST FREE !*
COMP PRO JOYSTICK STD	ONLY £13.95 *POST FREE !*
COMP PRO JOYSTICK CLEAR	ONLY £14.95 *POST FREE !*
COMP PRO JOYSTICK EXTRA	ONLY £15.95 *POST FREE !*
3.5 DISK DRIVE CLEANING KIT	ONLY £ 5.95 *POST FREE !*
GOLDSTAR 3.5 DSDD DISKS (10)	ONLY £14.95 *POST FREE !*
CUMANA 3.5 EXTERNAL D/DRIVE	ONLY £94.94 *POST FREE !*

ORDER FORM *Please rush me the following items.*

QTY ITEM PRICE

I enclose cheque/postal order for £ _____

Please send me your latest catalogue disk ☐ (Tick)

NAME _____

ADDRESS _____

POST CODE _____

Please Send To: **ROBSON ELECTRONICS**

Newcastle House, High Spen, Rowlands Gill, Tyne & Wear, NE39 2BL

ZVP VIDEOSTUDIO

Lights! Camera! Action? Mark Smiddy puts on his director's cap and focuses on Z-Video.

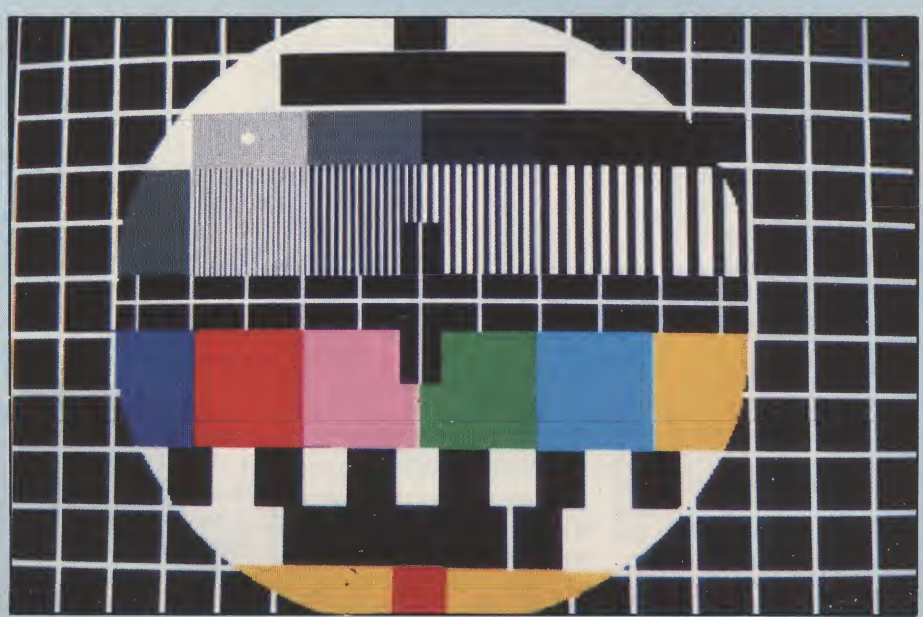
Equipping a video lab can be a costly exercise at the best of times. Just for starters there is a camcorder to buy, the editing suit, monitors, light...The list is almost endless and could run in to thousands of pounds. However, to produce a really professional product you will need something to put the finishing touches to the work — titles, credits and so on. The Amiga, equipped with a genlock device can do all of this and much more — with the right software at a fraction of the cost of most commercial offerings. This is where Videostudio comes in. At an affordable price, it offers a host of features at your fingertips. But how good is it?

The basic specification for the package is excellent. It comes on two disks brimming with programs and example files, with a manual — in a box about the size of a video cassette case. A quick glance at the manual confirms Videostudio only runs on Amiga's with at least 1Mb and two disk drives, which does, of course, add to the cost. In addition it needs an RTC as fitted to the A501 RAM expansion to function properly. If the clock is not found, as is the case with cheaper expansions, the boot sequence fails.

A quick glance at the manual confirms why — the RTC is used to generate times and dates on some of the overlays — still you can set it manually from the preferences. It also tells something of Z-Video, being probably the worst produced manual I have ever set eyes on for a serious product. Although this may be changed at a later date, mine consisted of 13 photocopied sheets — held together with staples. It did not even have an index, which is a pity since it gives a very bad first impression.

After the disks have been booted, the program is run from the second disk. It now presents a functions screen consisting of a series of nine tasks. From here you can gain access to all of the major sub-programs in the package. Here is the second disappointment. The whole package is held together by a set of numbered menus — there is no use of Intuition requesters or menus whatsoever. The only one I did manage to find refused to work properly. At other times clicking the right button cause the machine to hang up.

"There is a full set of testcards to help set up your system — although as the manual states these can only be used as a guide — the Amiga was never designed as a broadcast test rig."



This got me wondering what language Videostudio was written in. A C or machine code programmer would normally use overlays. Sure enough, it was written in BASIC! Not that I have anything against BASIC or its use in commercial packages — but the end must justify the means and Videostudio sadly, does not.

When it works, Videostudio has very good features indeed. And if you are prepared to battle through it, it can produce very good results. For instance, there is a full set of testcards to help set up your system — although as the manual states these can only be used as a guide — the Amiga was never designed as a broadcast test rig.

Other features of note are the clock options. The program caters for several different types, including a station clock — like the one use by Channel 4 and some digital designs. One even

continued on page 76

Retail Cash And Carry
42-44 Millbrook Road East
Southampton
Personal Callers Welcome

MEGALAND

Tel: 0703 332225
Fax: 0703 225352

OFFER STA 1
Cumana CAS 354
Amiga Drive Own PSU
£115 Inc VAT

OFFER STA 5
Star LC10
£195 Inc VAT

OFFER STA 8
Star LC 10 Commodore
£179 Inc VAT
Star LC10 Col
Commodore
C199 Inc VAT

COMMODORE PC 1

OFFER STA 2
Commodore PC 1
High Res Mono
Able -1 Software
£309 Inc VAT

OFFER STA 3
Commodore PC 1
C.G.A. Colour Mon
Able -1 S/W
£425 Inc VAT

OFFER STA 6
Epson LX 800
Special Low Price
£149 Plus VAT

Offer STA 7
Philips 8833 Monitor
£229 Inc VAT

OFFER STA 4
PHONE FOR CATALOGUE
ON MEGASOFT
SOFTWARE
CLUB

DRAGONS LAIR
FOR ***AMIGA***
£ Phone

OFFER STA 9
C64 1581
3 1/2" D/DRIVE
£149 Inc VAT

ALL A500 AMIGA SPECIAL PACKS
INCLUDE WORKBENCH 1.3 IF REQUESTED

NEW YEAR B2000 PACK 1084S OR 8833
MONITOR
B2000 XT B/BOARD
PC CONTROLLER
HARD DISKDRIVE

AMIGA B2000

B2000	£839 + VAT	VISION V4200	£169 + VAT
XT B/BOARD	£399 + VAT	8MB RAM/B	£499 + VAT
20 MB HARD/D	POA	XT B/BOARD	£399 + VAT
2nd DRIVE 3 1/2	£75+VAT	INT GENLOCK	£179 + VAT
PHILIPS 8833	£199+VAT	AT B/BOARD (IN STOCK)	£745 + VAT

Part Exchange Your Amiga A500 On The NEW YEAR B2000 PACK
A500 up to 6 months old.....£250
A500 6 to 12 months old £200
A500 12 months or more.....£150

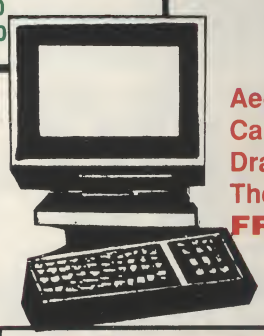
CRAZY PRICES ONLY
£399 INC .VAT.

MEGALAND, YOU SELECT 10 OF OUR SUPER TITLES FROM THE LIST PLUS AN AMIGA
A500 INC. TV MODULATOR KICK START 1.3
WORKBENCH 1.3 EXTRAS 1.3 TUTORIAL DISK
MOUSE IMB INTEGRAL DRIVE

SPECIAL EXTRAS

Aegis Sonix	Add	£20.00
Carrier Command	Add	£8.00
Dragons Lair	Add	£15.00
The Works	Add	£35.00

FREE DELIVERY ON THIS OFFER



AMIGA SPECIAL PACKS
SELECT ANY 10 GAMES
Backlash, Karate Kid 2, Gold Runner, Wizball, Stargoose, Platoon, International Soccer, Las Vegas, Demolition, Grid Star, Winter Olympiad, Quadralien, Sky Fighter, Spitting Image Joy Stick, Photon Paint, Four PD Disks

ATARI SUPER PACK
21 Top Games Titles Plus Organiser Software - Word Processor, Data Base, Spreadsheet Worth **£450 only £299 + VAT**

EXCLUSIVE *MEGALAND* MONITOR OFFER
For a limited period when you order your *AMIGA* OR *ATARI* you can purchase a Philips 8833 Stereo Monitor for only £199 Inc Vat or a Vision V4200 (Made by Philips) Colour Monitor £179 Inc Vat (Similar to Commodore 1084)

OFFER ST1
Atari 520 STFM
1MB Drive
Explorer Pack
£225 + VAT

OFFER ST2
Atari 520 STFM
1 MB Drive
Explorer Pack
SM 124 Mono Monitor
£324 + VAT

OFFER ST4
Atari 1040 STFM
+ TV Mod
+ SM 124 Mono Monitor
£429 + VAT

OFFER ST3
Atari 1040 STFM
Inc TV Modulator
£329 + VAT

ATARI 1040 with Philips 8833 Colour Monitor

PRINTERS

Star LC10 .....£199 Inc VAT
Star LC10 Col.....£249 Inc VAT
Complete Star Range In Stock
Juki 6000 D/Wheel..... £129 Inc VAT

NEC 2200 24 pin .....£229 + VAT
Okimate 20.....£119 + VAT
Epson LX 800 ...£149 + VAT
Canon A60 18 pin.£199 Inc VAT
A Much Wider Range Of

DISKS

3.5 D/S D/D Bulk
£1.40 Each Inc VAT
10" 3.5 D/S D/D in Lockable D/Box
£29.95 Inc VAT

DRIVES

SLM804 Laser Printer	£949 + VAT
SM205 Hard Disk	£469 + VAT
Triangle 20 MB Hard Disk	£415 + VAT
Triangle 40 MB Hard Disk	£579 + VAT
Cumana CSA 354	£99 inc VAT
Cumana CDA 358	£199 + VAT
Cumana 1Mb 5 1/4	£115 + VAT
External 2nd Drives	From £85 inc VAT

BOOKS

ST Programmers Reference	£14.95	ST Disk Drives - Inside & Out	£16.95
ST Machine Language	£14.95	ST Internals	£14.95
ST Tricks & Tips	£14.95	Atari Basic Source Book	£9.95
ST Basic Training Guide	£12..95	Concise ST66000 Ref Guide Ver 2	£9.95
ST Intro To Midi Programming	£14.95	First Step in 68000 ASS Language	£9.95
ST 3D Graphics	£16.95	GFA Basic Advanced Programming	£11.95
		Using ST Basic on the Atari	£5.95

continued from page 74

ZVP VIDEOSTUDIO

includes a frame counter. In addition the program includes all of the features necessary to perform some very impressive scrolling titles genlocked on to the screen. Scrolls can be either horizontal or vertical and displayed alongside a variety of different frames.

The power of Videostudio is its ability to load IFF picture files and display or genlock them with text and scrolling messages. However, the program can only display up to 32 colours and the resolution/colour format must be known in advance. It can not glean this information from the picture file itself. Similarly, messages are entered via quite the most awful editor I have ever come across. Why did they not think to include the ability to load simple ASCII files?

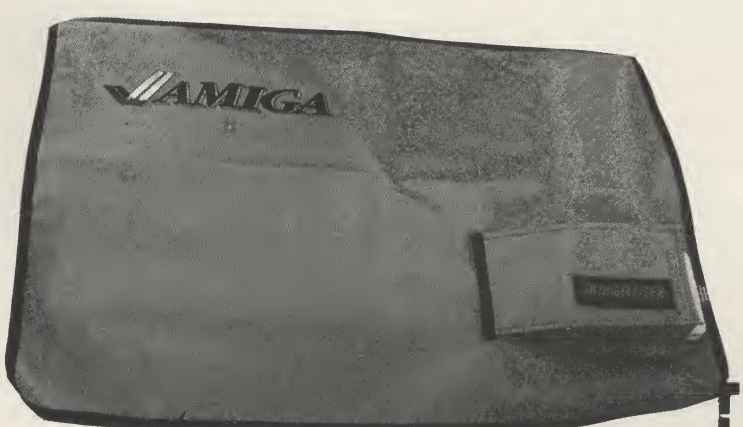
I showed Videostudio to an associate of mine who works in a video department. His comments: "This package is of special interest to amateur video producers everywhere and should improve the quality of their finished work immensely. But, it is of very limited use to professional or semi-professional groups, who will probably already have the facilities to produce similar displays more simply and quickly."

In the end Videostudio is a story of what could have been. It could have been wonderful — had Z-Video had the tenacity to juggle with Intuition rather than using outdated menus. It is a product which has a lot of good ideas, many of which can not be found anywhere else — but getting at them requires a lot of needless button pushing. All the same, if they iron out the bugs, add a lot more polish and get someone to write them a decent manual — then Videostudio will take some beating. As it stands — I can not really recommend it at the current price.

M. S.

Price: £79.95
Contact: Z-Video products, 11 Danacre, Laindon, Basildon, Essex, SS15 5PT.
Plus Points: Very wide range of features, plenty of good quality fonts, can load some IFF pictures, does not need genlock.
Drawbacks: No use of intuition; tendency to "hang up"; needs a meg to run.

AMIGA 500 — THE GREAT COVER UP!



Your swish new Amiga 500 should not be subjected to the ordeal of C — coke, coffee, crumbs and crips — at least not while you are not using it! So the best thing to do is cover it up — keep it protected by an exclusively designed Amiga 500 cover. Each CCI Amiga 500 cover is tailor-made, to fit the machine. It has the official Amiga logo printed in full colour on the top and is specialy created to give complete protection against dust and other damaging substances. It is expertly sewn throughout, fully bound and manufactured from very high quality grey supported nylon material.

It has a special mouse pocket and the whole cover fits snugly over the complete Amiga 500 computer, giving it extra protection to help keep it in good working condition.

The Amiga 500 cover — only £7.99 inc. p&p.

ONLY **£7.99** incl. P&P

Commodore Amiga User International
40 Bowling Green Lane, London EC1R 0NE
I enclose cheque/P.O. No.
for the amount shown above payable to 'Croftward Ltd' or please debit my ACCESS account No.

Signature _____ Expiry date _____

Name _____

Address _____

Telephone Number _____

Please allow 28 days for delivery.

LATTICE DEVELOPMENT SYSTEM 5.0

Bill Harvey examines Lattice's latest release, which looks likely to win some new friends among new Amiga users.

Lattice have just released a new version of their AmigaDOS C Compiler package. It's called the 'Lattice Development System (version 5.0)' and that, in a nutshell, is exactly what it is..... a complete and well integrated environment for the development of both C and assembler programs. Version 5.0 gives you a C compiler, an overlay linker, a Screen Editor, an optimizer, an assembler and an applications profiler. The complete set of Lattice Compiler Companion utilities (reviewed - A.U.I. December 88 issue) are also provided together with a whole range of other utility programs. The function library which Lattice provide is still growing and it now contains nearly three hundred pre-written functions. The most startling addition to the package is a new piece of Lattice software known as a 'Source Level Debugger' - this is a very sophisticated monitor that enables you to execute a compiled program..... and see the C source code displayed as it runs ! You can examine variables during execution, set breakpoints, view and modify register data, and even look at the corresponding assembly language code. 'CodeProbe', which is the debugger's name, is absolutely brilliant and has had more than a few of us at A.U.I. fighting to use it.

The new compiler has undergone various internal enhancements which, at the end of the day, means that it now produces faster and more compact code. There have been some algorithm improvements and this, together with a bit of extra assembly language coding, provides some quite noticeable performance increases. The compiler now supports code generation for the 68000 - 68030 range and the 68881/68882 maths co-processors. There is an ANSI committee currently in the process of examining the C language in order to remove a few trouble spots in the existing language and this will eventually lead to a formal ANSI language standard being published. Lattice have representatives on the ANSI committee - so it is not really surprising that their compiler is almost fully compatible with the current ANSI proposals.

The Development System comes on five disks together with two manuals. As usual, Lattice's documentation is excellent and despite the fact that the manuals contain a lot of material the layout is such that it is easy to find your way around. The initial sections of the first manual provide the user guide. This outlines the relationship between Lattice C and the original Kernighan and Richie text and, together with a discussion of the compiler implementation, puts the Lattice package into perspective - it makes interesting reading. Each module, each utility and every command is explained in detail and to help the beginners on their way there are a number of simple examples available. Additional examples are also provided on the release disks themselves. The function library routines are particularly well documented and a comprehensive master index ensures that information can be found quickly and efficiently.

Several new options now exist... the compilers response to various error conditions can now be directly controlled and it is possible to change the optimization emphasis which means that you can either minimize the code size or minimize the execution time. Some additional keywords are now available including the long awaited 'chip' keyword which allows the programmer to place objects directly into the Amiga's lower 512K of chip memory.

Lattice have also chosen to include the complete set of Compiler Companion utilities. It's not long since we looked at these so here's just a brief run down on what you get:

CXREF produces cross-reference listings from C source files. It creates tables showing functions, labels, definitions etc. and details of their location.

DIFF is a utility which lets you compare files and determine differences between them.

EXTRACT and BUILD enable you to automate complex sequences.

FILES is a file manipulation utility.

GREP searches sets of files for specified character patterns. It is a very useful utility and because the functions/headers are also included with the Compiler package you've got a ready made way of putting these search facilities into your own programs.

LMK is a utility which is used to co-ordinate the maintenance of projects involving multiple files.

SPLAT is a line based editor similar to 'Edit' but more sophisticated.

TOUCH adjusts the time and date stamp on specified files.

WC displays the number of characters, words and lines in the file. It is often used to provide a rapid check as to whether files are the same or not.

The Lattice Screen Editor (LSE) has been around for quite a while both as a separate package and as part of earlier professional development packages.

"you can have several files open at once and you can move blocks of data from one file to another - this makes duplicating sections of headers and define blocks, moving routines from one source to another etc., a piece of cake."

For many years I must admit that LSE was one of the few Lattice products which I did not seem to use. All my assembly language and C source code was prepared using a wordprocessor and because I was happy with the arrangement I saw little reason to

continued on page 78

continued from page 77

change.

When I finally did get around to playing with LSE I was pleasantly surprised to find that it is actually very good. For a start you can have several files open at once and you can move blocks of data from one file to another - this makes duplicating sections of headers and define blocks, moving routines from one source to another etc., a piece of cake. This can save lots of typing but more important than that, it tends to encourage consistency. LSE's keystroke commands are user programmable so it is quite easy to make LSE mimic another editor if you so wish, although I must admit I've never bothered to do this myself.

The editor supports all the normal search and search/replace facilities and these not only include simple string based search but 'grep' type pattern searching as well. Using LSE you can write your source and compile it directly from memory. A single keystroke invokes the compiler using your pre-defined compiler and error checking options and this then passes any error information back to the LSE. This arrangement speeds up the overall compile/edit cycle and is something that you will not get with other editors. Another timesaver that LSE provides is a macro facility..... combinations of commands and strings which you use frequently can be saved as 'macro commands' that can be recalled with just a couple of keystrokes. There is a variety of other facilities available including on-line help, auto-indenting, word-wrap, and special modes for assembly language programmers.

The global optimizer, GO, is a piece of software which seeks to generally improve the performance of a program. It analyses a quad file, performs several types of optimizations, and produces another quad file. Again this has been used by Lattice on their existing library routines. GO looks at register assignments, unused variables and code, it identifies and merges common sub-expressions, pulls invariant calculations outside of loops and looks at a host of other areas as well. It's a clever piece of software but for the end user the results are simple - you end up with improved code.

The Lattice profiler is another useful software tool. It enables you to analyse a program's operation and obtain statistics concerning the execution times of the individual routines. This helps you to identify those areas where code changes might make significant improvements - it is a very useful piece of software to have and is one that Lattice themselves put to good use.

Lattice have included a full specification assembler with the development kit and of course all of the necessary '.i' header files are included as well. Assembly language on the Amiga is not everybody's cup of tea but, strangely enough, once you have got used to the Amiga's operating system it can even become good fun. You might not necessarily want to get involved with assembly language to start with - but it is nice to know that the tools will be there if you ever need them. The serious amateur or professional programmer will know the benefits of a mixed code approach because there are lots of advantages to using C for the bulk of your work but handling certain performance critical areas with assembly language.

The compiler supports the use of precompiled header files, includes several of the ANSI encouraged built-in functions and has the facilities for creating 'load-and-stay-resident' programs. Several other items are provided with the development package including an fd2pragma utility which converts Commodore FD files into pragma statements that can be used within your C program. There is also a traceback utility which can catch Guru type program termination problems. Traceback is used in conjunction with a special start-up routine and allows you to retrieve the run-time stack data, the registers at the time of termination, the memory, application data and the environment info. It's not a tool for the beginner primarily because you need to be happy with both 68000 assembly language and with the Amiga's operating system for the information to be of use.

"There is also a traceback utility which can catch Guru type program termination problems."

CodeProbe

CodeProbe, Lattice's new source code debugger, is a fascinating piece of software which enables you to monitor the execution of a compiled C program. You actually see the program execution in terms of the C source code..... as the program executes. Compiling a program using one of the debugging options allows CodeProbe to provide the magic link between the original source and the program's executable form. As the program executes the appropriate source line is highlighted. Lines which reference a function can be executed in one go or you can 'step into the line' and single step through the whole of the function call. You can set breakpoints, examine variables, display memory and register contents, modify data and even look at the assembly language equivalent of your source. CodeProbe can identify variables in terms of their original C declarations and has a host of other options that are very useful. CodeProbe is not just a brilliant debugging tool - it is a tool which has enormous potential uses for learning about the Amiga in general. I've already spent a lot of time with applications programs that work perfectly well just looking at window and screen structures, rastports, file info blocks and other system structures etc. Being able to actually look at these types of items during program execution opens up new horizons for the serious user.

Conclusions

This package is going to get the 100% 'rave review' treatment for the best reason in the world - I just can't find anything about it to fault it. Lattice produce tools for the professionals and have built their reputation on reliable, well supported, software. For a small fee (which I believe is around £40) existing Lattice users can upgrade to version 5.0 and the CodeProbe debugger alone would make the upgrade worthwhile. Lattice look after their existing users well, but oddly enough I think that on this occasion the people who will gain the most are going to be the totally new users. The Amiga has attracted many serious users who realize that it is a machine which you just cannot program effectively unless you have a working knowledge of C. Even competent assembly language programmers would not dispute this fact because almost all technical manuals and serious Amiga reference books will assume you are a fluent C programmer. You cannot become a fluent C programmer unless you are given the chance to practice and learn - and to do that you need a C compiler. For several years now I have been listening to people saying 'I'll start learning C when a cheap C compiler arrives'. These people are still waiting and, unless I am very much mistaken, they will still be waiting by the time the rest of us know the Amiga inside and out.

The new Lattice package will retail in the U.K. at around £200 but, for the serious user, this could be the most productive investment you have made since you purchased your Amiga. Good software, masses of utilities, excellent documentation, all from a Company with a reputation that is first class goes to make the Lattice Development System 5.0 quite simply the most impressive package I have ever seen for the Amiga. It provides an environment that has earned the respect of a great many professional programmers, yet it can be used effectively by a serious beginner to both learn about C and learn about the Amiga. If you have thought about getting involved with C on the Amiga then the time to start doing something about it has arrived. I kid you not, this package has got to be seen to be believed - it is worth every penny of the asking price and more.

Amiga P.D. Software Disks

£2.50 each or £19.99 for 10 including plastic box

1 KNIGHT DEMO*
2 ANIMATOR APPRENTICE*
3 YELLO MIX
4 LAND OF CONFUSION
5 HORROR DEMOS
6 CATWALK
7 VIDEO EFFECTS 3D*
8 UGLY MUG DEMO
9 ROADBLOCK
10 ACTION
11 EVERY INCH A LADY (15)
12 TAC BALL
13 TRACER DEMOS
14 BLACK LABEL DEMOS
15 SINNERS DEMO DISK
16 MICHAEL JACKSON
17 THAMES T.V. & DEMOS
18 JUNGLE COMMAND
19 PET SHOP BOYS
20 DIGIVIEW
21 DIGITISED SOUNDS
22 PHASE IV SLIDESHOW
23 JUGGLER & DEMOS
24 NEMESIS
25 NEWTEK DISK #1*
26 NEWTEK DISK #2*
27 MICHAELS SPLODGE DISK
28 ANIMATIONS #1
29 PD GAMES DISK
30 ANIMATIONS
31 ALF DEMO
32 BEST OF AMICUS
33 JARRE/DEAN
34 VOGD DEMO
35 BEST OF AMICUS #2
36 BEST OF AMICUS #3
37 BEST OF AMICUS #4
38 ROTBALLS*
39 PLUG HOLE DEMO DISK
40 ALF MIX #2
41 BAD
42 EARMASHERS
43 JUKEBOX
44 UNICYCLE
45 TECHNATION
46 MAGIC
47 SONIX JUKEBOX #1
48 MONOPOLY
49 TIFFANY DEMO
50 MILLER LITE
51 INTRO DISK #1
52 SABRINA SHOW (15)
53 FASHION MEGA DEMO
54 LOADSAMONEY
55 TOILET PAPER AD (15)
56 SLIDESHOW #1
57 SLIDESHOW #2
58 POP MUSIC DEMO
59 HOLSTEN PILS
60 IAN & MIC DEMO II
61 SAFE SEX DEMO
62 MIAMI VICE #1
63 MIAMI VICE #2
64 MIAMI VICE #3
65 MIAMI VICE #4
66 ICON DISK
67 RUN DMC
68 JUGGLER
69 WORKBENCH DEMOS
70 INSTRUMENTS #1
71 INSTRUMENTS #2
72 RGB & PROBE*
73 JEWELS COLLECTION
74 SONIX JUKEBOX #2
75 PHENOMENA DISK
76 MERLINS DISK
77 RATT DEMOS
78 GRANDMIX #1
79 TECH TECH DEMO
80 ROBOTEK
81 ROCKET RANGER DEMO
82 RAY TRACER
83 ACTION #2
84 TRICLOPS & P. SOUND
85 INTERCEPTOR DEMO
86 SS20 DEMOS
87 SAMANTHA FOX DEMO
88 FAMOUS PD HACKS
89 DEF. OF CROWN DEMO
90 AMAZING DEMOS #1
91 AMAZING DEMOS #2
92 AMAZING DEMOS #3
93 NOW MUSIC #1
94 NOW MUSIC #2
95 NOW MUSIC #3
96 NOW MUSIC #5
97 ICPUG DISK #1
98 ICPUG DISK #2
99 MUSIC INTROS #1
100 MUSIC INTROS #2
101 MUSIC INTROS #3
102 DIGIVIEW #2
103 DIGIVIEW #3
104 AMICUS #6
105 AMICUS #14
106 AMICUS #19
107 SLIDESHOW #3
108 SLIDESHOW #4
109 FAUG #26
110 FAUG #58
111 FAUG #60
112 FAUG #64
113 GOLDFISH #1
114 GOLDFISH #2
115 GOLDFISH #3
116 FISH #52
117 FISH #53
118 FISH #66
119 FISH #87
120 FISH #106
121 FISH #111
122 FISH #120
123 FISH #126
124 FISH #137
125 PD GAMES DISK #2
126 CLI DISK
127 SONIX JUKEBOX #3
128 SONIX JUKEBOX #4
129 SONIX JUKEBOX #5
130 SONIX JUKEBOX #6
131 BEST OF SONIX
132 SONIX CLASSICS
133 FREESTYLE DEMOS
134 MUSIC INVASION III A
135 MUSIC INVASION III B
136 MENTAL INVANOID
137 DRAGONS LAIR DEMO*
138 MUSIC DEMOS
139 DIGITISED SOUNDS FOR SONIX
140 TRACY CHAPMAN DEMO
141 PD GAMES #3
142 UTILITIES #1
143 UTILITIES #2
144 UTILITIES #3
145 SLIDESHOW #5
146 JAIL DEMO
147 SLIDESHOW #6
148 SLIDESHOW #7
149 SLIDESHOW #8
150 DREAM GOES BERSERK
151 AUSTRALIAN SLIDESHOW
152 WORKBENCH 1.3 GAMMA
153 FONTS DISK
154 PD ADVENTURES
155 PD GAMES #3
156 PD GAMES #4
157 MERSEY AD (15)
158 VORTEX MEGADEMO
159 ANTITRAX MEGADEMO
160 NORTHSTAR MEGADEMO
161 VARIOUS #1
162 GRAVATTACK
163 EQUINOXE
164 SPACEWRITER
165 DELIRIOUS 1A (XXX)
166 DELIRIOUS 1B (XXX)
167 DELIRIOUS 2A (XXX)
168 DELIRIOUS 2B (XXX)
169 VARIOUS #2
170 SLIDESHOW #9
171 NOW MUSIC #4
172 NOW MUSIC #6
173 NOW MUSIC #7
174 SONIX JUKEBOX #7
175 SONIX JUKEBOX #8
176 SONIX JUKEBOX #9
177 SONIX JUKEBOX #10
178 UTILITIES #4
179 UTILITIES #5
180 UTILITIES #6

LATEST ADDITIONS
181 INTROS #3
182 INTROS #4
183 CLI DISK #2
184 INTROS #5
185 NOW MUSIC #8
186 SONIX JUKEBOX #11
187 BUGGY COMMANDO
188 PYTHON A
189 PYTHON B
190 RAM DISK MANAGER
191 BOWIE DEMO
192 BOARDWALK #1
193 BOARDWALK #2
194 JCS MEGADEMO
195 CLASSIC DEMO
196 PHOTOLAB DEMO #1
197 TRIANGLE DEMO
198 AFTERBLITTER
199 EAA MUSIC DISK
200 PHOTOLAB DEMO #2
201 STARCHART
202 RSI/DEFJAM DEMO
203 SONIX JUKEBOX #12
204 SONIX JUKEBOX #13
205 MEGAFORCE MUSIC
206 LUXO*
207 ELITE DEMO
208 SLIDESHOW #10
209 REPTILLIA
210 RIPPING YARNS
211 REVOLUTIONS
212 DIGITA DEMOS
213 SOUNDS
214 CARTOON PICS
215 DEREK & CLIVE A
216 DEREK & CLIVE B
217 DELUXEPAINT ART
218 MADONNA SLIDES
219 SUBWAY MUSIC
220 WALKER DEMO A*
221 WALKER DEMO B*
222 INTROS #7
223 INTROS #8
224 INTROS #9
225 UTILITIES #6
226 UTILITIES #7
227 V42 MEGADEMO
228 LEVEL 1 MEGADEMO
229 BUNSEN BURNER
230 NOW MUSIC #9
231 NOW MUSIC #10
232 NOW MUSIC #11

* 1 Meg or more only

Accessories

3½" DISKS

Inc Labels
100% Certified. D/S D/D 135tpi

10	50	100
£9.95	£47.50	£90.00

Disk Boxes

3.5" disk box holds 40	£6.95
3.5" disk box holds 80	£8.95
3.5" disk box holds 120	£10.95
Posso deluxe disk box *holds 150*	£15.95

Joystick/mouse extension lead	£4.95
Mouse mat soft, red grey or blue	£3.95
Mouse mat hard, grey only	£4.95
3.5" disk drive cleaner kit	£3.95
Printer cables 1.2m	£6.99
Printer 3.0m	£8.99

ALL PRICES INCLUDE V.A.T., POSTAGE AND PACKING IN U.K. ALL ITEMS CARRY A 12 MONTHS NO QUIBBLE GUARANTEE. LATEST LISTS SENT WITH EVERY ORDER OR SEND S.A.E. STOCKS SUBJECT TO AVAILABILITY. E&OE. CHEQUES AND POSTAL ORDERS MADE PAYABLE TO:

1 Victoria Arcade, Aldergate, Tamworth, Staffs, B79 7DL. Tel: 0827 59566

EAZYPRINT COMPUTERS LIMITED

Telephone (0932) 780103/781257

AMIGA SOFTWARE NOW AVAILABLE

Amiga Gold Hits 1	18.50	DigiView Gold	119.95
Baal	16.00	Comic Setter	50.00
Barbarian II	18.00	Sonix	35.00
Batman	18.50	Deluxe Video	47.50
California Games	17.50	Deluxe Productions	105.00
Phantom Fighter	17.90	The Works	55.00
Mini Golf	13.50	Critics Choice	111.50
Hellfire Attack	17.25	Express Paint	50.00
Crazy Cars II	18.00	Photon Paint	29.95
F-16 Falcon	21.00	Mouse Mats	6.00
Gauntlet II	14.00	Disk Box	9.95
Superman	17.50	Flicker Master 14" Screen	12.95
Dark Fusion	14.00	Macro Assembler	50.00

Any Available title sent to you within 48 hours
All prices include VAT and mainline UK postage
Overseas add 25p per title

Price Structure: R.R.P	Our Price
29.95	21.00
24.95	16.50
19.95	13.75
14.95	10.50
9.95	8.00

THE BEST PRICES FOR AMIGA HARDWARE

Amiga A500 + TV Modulator	370.00
Amiga A500 + 1084S	620.00
1084S Stereo Monitor	260.00
40 Mb A500 Hard Disk	599.00
A501 512K RAM	132.50
Cumana Limited Edition Drive	
On/Off Switch + Daisychain	100.00
Cumana CAX354 Drive	90.00
Rendale Budget Genlock	270.00
Broadcast quality Genlock	750.00
Amiga 500 80 Mb Hard Disk	994.00

AMIGA 2000

Lastest Spec B2000, 1.3 OS,
880K Disk Drive, AmigaBASIC
1150.00

As above with 1084 Monitor	1390.00
XT Bridgeboard	330.00
20 Mb MS-DOS Hard Disk	300.00

E.C.L. DENMAR HOUSE, 30 SCOTTS AVENUE, SUNBURY-ON-THAMES, MIDDX TW16 7HZ
Telephone (0932) 781257/780103. Fax: (0932) 780367

U.K. GAMES CHART

Game	Company	Last Month	Price
1. Operation Wolf	*Ocean*	(1)	£24.95
2. Sword of Sodan	*Discovery*	(-)	£24.95
3. Falcon	*Mirrorsoft*	(3)	£29.99
4. TV Sports Football	*Mirrorsoft*	(-)	£29.99
5. Dungeon Master	*Mirrorsoft*	(4)	£29.95
6. Who Framed Roger Rabbit	*Activision*	(5)	£24.95
7. Thunderblade	*U.S. Gold*	(2)	£24.95
8. Purple Saturn Day	*Infogrames*	(-)	£24.95
9. Rocket Ranger	*Cinemaware*	(6)	£29.99
10. Double Dragon	*Melbourne House*	(9)	£24.95

OFFICIAL COMMODORE/AMIGA DEALER

COMPUTERS

Amiga B2000 only	1029.00
Amiga B2000 + 1084S Colour Monitor	1279.00
Amiga 2088 PC/XT Bridgeboard + 5.25" Drive	481.85
Amiga 500 inc TV Modulator	359.00
Amiga 500 + Mod + Games Pack	399.00
Amiga 500 + A501 RAM + Mod + Dragon's Lair	496.00
Amiga 500 + Commodore 1084S Colour Mon	619.00
Amiga 500 + Philips 8833 Stereo Colour Mon	589.00
PRINTERS	
Citizen 120D Parallel	129.95
Star LC-10 Parallel inc lead	199.00
Star LC-10 Colour Parallel inc lead	249.00
Star Lc24-10 24 pin Multi-font 170/57 cps	329.00
All Oki 20 consumables normally in stock	PHONE
MONITORS	
Commodore 1084S Colour Monitor inc lead	279.00
Philips 8833 Stereo Colour Monitor inc lead	239.00
Philips 7502 Green Screen Monitor	85.00
MODEMS	
Pace Modem + S/ware for Amiga V21/23 Prestel, BBS etc.	239.00
DISK DRIVES	
Amiga 2092 20Mb PC Hard Disk Drive	319.00
Amiga 2094 20Mb Amiga Hard Disk Drive	359.00
Amiga 2010 Internal 3.5" Disk Drive	136.85
Cumana CAX354 Disk Drive	95.00
Cumana CAS354 Mains Pwrd Disk Drive	124.95
Supra 30Mb External Hard Disk for A500/1000	629.00
MISCELLANEOUS	
Amiga 501 512K RAM/Clock Expansion	139.00
Unbranded 3.5" Disks in Library Case	13.95
Surge Protector 13A Plug/3-way Adaptor	12.95/15.95
Amiga DOS Reference manual	22.95
MiniGEN LOW COST GENLOCK!	113.85
Printer Buffer 64K	109.00
Addison Wesley Amiga Ref Manuals	PHONE
SOFTWARE	
Superbase Personal	49.95
Superbase Personal 2	69.95
Aegis Video Titler	86.50
Pro Video Plus	189.00
Digiview Gold	119.95
Kindwords 2	49.00
VizaWrite	79.00
Word Perfect	169.00
Lattice C V5	185.00

ALL PRICES ARE INCLUSIVE OF VAT AT 15%
CARRIAGE £5 (EXPRESS £10). SOFTWARE AND SMALL ITEMS FREE
Prices subject to change without notice ***E&OE***

Delta Pi Software Ltd

8 Ruswarp Lane, WHITBY, N. Yorks. YO2 1ND.
Tel: 0947 600065 (9am-7pm)

PHOTOFILE

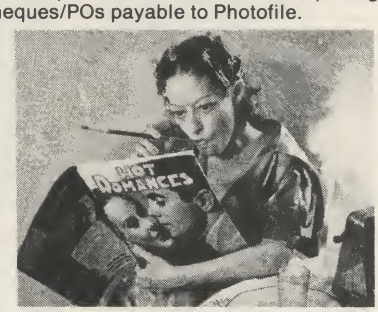
DIGITISING SERVICE

You supply the pictures, we do the rest.

HAM+, Lo-res, High-res, Halfbrite. Interlace or Overscan if required. Use with Photon Paint, Deluxe Paint 2, Kind Words etc.

Colour pictures £1.50 each **B&W pictures £1.00 each**

15 Lo-res or 10 HAM, High-res or Halfbrite pictures per disk. Just send us your photographs, pictures or drawings and we will return them with your order promptly and completely unharmed. Please add £3.00 per order for DS/DD disk, postage & packing and make cheques/POs payable to Photofile.



Why not let us create a continuous slideshow of your business products, premises or personnel using high quality video special effects on one or more disks? Phone for details.

PHOTOFILE, Dept/AUI, PO BOX 196, Nottingham, NG2 4GQ Tel: (0602 481997)

We regret that Photofile cannot accept responsibility for photographs and pictures lost or damaged in the post.

SWORD OF SODAN

Grasp the Sword of Sodan and feel the true power of arcade action!

Creaking, groaning, shrieking, teeth clenching arcade realism.
Deep dark forests.
Misty, eerie graveyards.
Treacherous, guard-filled streets.
Dare to enter the evil castle, Craggamoore.
Wield your sword through its winding corridors and rank rotting dungeons.
Your story will be the greatest ever told — Your reward will be the greatest ever known!

FEATURES:

- ***Battle with massive animated characters that stand 2/3rds the size of the screen.***
- ***Fight as Hero or Heroine through 11 incredibly challenging levels!***
- ***Study your past performance in Replay Mode! (extra memory required)***

Packed into 3 disks with more than 4 MEGABYTES of detailed graphics and digitized sounds!

Available for Amiga™, Coming soon for IBM® and compatibles, Apple II GS.

AMIGA screens shown.

DISCOVERY SOFTWARE

Sword of Sodan is a trademark of Discovery Software International Inc. Amiga is a trademark of Commodore Amiga, Inc. IBM is a registered trademark of International Business Machines, Inc.

GAINSTAR — UNIT 1, REAR OF 7 WELLINGTON ROAD, SANDHURST, SURREY GU17 8AW.
TEL. 0252 877431 or 879718.
TRADE ENQUIRIES WELCOME

Dorian 1988 ©

ARCHIVE YOUR AUI COLLECTION

Now you can keep your Amiga User International magazines safe and clean. No more dog-eared covers or missing copies... You can protect your magazines in this high quality, specially-created AUI binder. This Amiga User International binder will comfortably hold a complete year's issues of your favourite Amiga magazine. It is a high quality product, British-made and comes with full binding instructions. It is manufactured in a rich, sage green with genuine gold blocked lettering.

Enhance your Amiga User International Magazine collection now for only £5.95 (inc. postage and packing). *Send for one today! The AUI binders also make an ideal gift for other Amiga users too!*

TO AMIGA USER INTERNATIONAL
40 BOWLING GREEN LANE, LONDON EC1R 0NE

Please send me ☐ *Amiga User International* binders.
I enclose £5.95 for each binder including VAT, postage & packing.
Readers outside the UK and Eire please add £1.50 for surface overseas mail
Please make cheques payable to Croftward Limited or debit my ACCESS account:

Name _____

Address _____

_____

Tel No. _____

PHOTOCOPIES OF THIS COUPON WELCOMED!

continued from page 70

CALCULATING AMIGA

```
REM Listing 2
REM Geostationary Satellite Locator


REM Constants - amend these for your Station/Listening Post location

Latitude=56.113 : REM Station Location (Degrees North)
Longitude=3.575 : REM Station Location (Degrees West)
PI=3.14159265#: DegRad=PI/180


Startup:
CLS
PRINT "Geostationary Satellite Locator"
PRINT :PRINT "All text input should be in Upper Case"
PRINT :PRINT

In.Data:
INPUT "What is the Equator Longitude of the Satellite (Degrees West)";C
PRINT
PRINT "Geostationary Satellite located at";C;"Degrees W":PRINT
PRINT "Home Station/Listening Post located at";Latitude;"Degrees N, ";Longitude
;"Degrees W"
PRINT

Calc.Result:
Latitude=Latitude*DegRad: Longitude=Longitude*DegRad: C=C*DegRad
DC=COS(Latitude)*COS(C-Longitude):DS=SQR(1-DC*DC)
D=PI/2-ATN(DC/DS)
IF D>1.41895 THEN GOTO Hard.Luck
J=-SIN(Latitude)*DC/(COS(Latitude)*DS)
IF ABS(J)>.9999 THEN J=SGN(J)*.9999
Azimuth=90-ATN(J/SQR(1-J*J))/DegRad
IF C>Longitude AND C<(PI+Longitude) OR C>(2*PI+Longitude) THEN Azimuth=360-Azimu
th
Elevation=ATN((42171&*DC-6371)/(42171&*DS))/DegRad

Out.Data:
PRINT "Azimuth Bearing from Home Station to Satellite =";INT(Azimuth+.5);" Degre
es"
PRINT "Elevation from Home Station to Satellite =";INT(Elevation+.5);" Degrees
PRINT:PRINT
PRINT :PRINT "Press any key to run again"

Hang.On.A.Bit:
Pause$=INKEY$: IF Pause$<>"" THEN Startup ELSE Hang.On.A.Bit

Hard.Luck:
PRINT "Too bad - the Satellite is below your Horizon!": GOTO Startup
```

Intuition

Part II

This month Mike Nelson explains the IDCMP and its various uses.

Some of the flags may at first sight seem a little frivolous but a closer look at the system reveals their raison d'être (I wonder if they can print a circumflex!). The most friendly way of checking for these messages is to use the Exec function WaitPort() which literally sends the program to sleep until something happens to wake it up. If the program is constantly checking for disk changes or timer information then it is using up valuable processor time in doing so. This can seriously slow down the overall operation of the machine and will annoy your user intensly, as all they want is to have your program available at the flick of a mouse button and to only speak when spoken to. Hence these flags can be very useful in minimising the processor time taken up by your program when it is basically doing nothing constructive. Of course there are programs such as a graphics game where you have no choice about going to sleep, because the INTUITICKS events are simply not frequent enough to wake up the program for a sufficient time if, for instance, there is a lot of number crunching involved for fast animation. However you should always give the user the option of sending the program to sleep. How can you code this?

The answer lies in the method used in scanning the IDCMP for incoming messages. You can either do a WaitPort() as described earlier or check frequently if there is a message present yourself, on a flying visit using the GetMsg() function. The program below can use either method- all you have to do is to delete the WaitPort() call, leaving the if (message = GetMsg())«... Another alternative is to use a while loop to read every message at the port before returning to main(). The exact choice really depends on your program and mood as there are certain benefits from each different mechanism.

So to this month's program. I have christened it ComDem in an uninspired moment as it is a demonstration of Intuition communications. Its aim in life is to open a window in the Workbench screen, with all the usual paraphernalia and report on key presses, disk changes and display the internal time in the title bar. This may sound quite awesome but the code is quite small and a something of a bare bones affair but it should illustrate some of the points raised above.

Firstly, the NewWindow structure has the IDCMPFlags member set to cause appropriate IntuiMessages to be sent to the IDCMP of the Window. The latter are generated by Intuition in response to the OpenWindow() call. The other global variables are also handled here.

I have deliberately kept main() quite small as the program doesn't really do much and it is probably wise to delegate the opening and closing to specific routines.

The doIDCMP() function is the "mission control" of the program and warrants some explanation. The variables it uses are a pointer to the message structure (allocated in the Window -› UserPort bit) and a little counter to ensure that the routine only responds to every seven INTUITICKS messages.

The use of WaitPort() has been discussed previously and the statement can be omitted completely as the next line checks if a message has been sent before proceeding.

It is very important to reply quickly to messages using the ReplyMsg() function from Exec. This is because Intuition can be held up with the verify messages and the rest of the computer can grind to an unceremonious halt if Intuition is waiting for you to finish drawing the Mona Lisa in HAM before allowing a menu to be constructed. Further, you will not receive any more INTUITICKS messages once one is posted and not cleared by a ReplyMsg(). It is probably advisable to avoid doing any hefty processing in the doIDCMP part of the program as IntuiMessages are queued up until you ReplyMsg() to them individually so you could gum up the works (to be technical about it) if there are too many messages littering up the system.

Once a message has been received and a reply sent (thereby clearing the port), the routine sorts out which message was present. The IntuiMessage structure is examined for this and the switch statement is a convenient way of processing the Class member. In the event of a VANILLAKEY message (generated by pressing a key) the program simply prints the character assigned to variable c and main() checks this for the space bar which can be used to quit the program.

A CLOSEWINDOW is generated by clicking on the appropriate gadget but Intuition merely tells us that this is what the user wants: it is up to the individual program to physically call the CloseWindow() function and see to de-allocating its non-Intuition handled resources.

The program receives about ten INTUITICKS a second but we only call the DateStamp() routine once every seven ticks as the clock is only accurate to within 1 second or so.

I included the disk checks for fun as all the program does is to flash the screen using Intuition's very own screen flash function. Perhaps this could be extended to play a sampled sound or something equally as trivial!

BuildTimeString() reads the DateStamp() internal time and converts the unfriendly LONG format into hours, minutes and seconds. It then uses these to build a string of nine characters stored in array Tim[] and terminated by a NULL character. The SetWindowTitles() function is then used to display the current system time in the title bar of the window. The calculations are not particularly accurate and if you run the Workbench clock program at the same time you find that the program only gives an approximation of the time. I have used conditional expressions to pad out the string with leading zeros so the time is always displayed as six digits.

In conclusion then the IDCMP is a very versatile and flexible arrangement and is relatively easy to employ. Your program can find out exactly what is going on with Intuition doing all of the hard work. However, there are always alternatives such as the console device but, although being more powerful, this is much more complicated to use.

M.N.

continued on page 86

S.C.C. MAIL ORDER

COMMODORE HARDWARE

PACK 1	PACK 2	PACK 3
Amiga 500 Modulator/Mouse Workbench + Basic/Extras+ The Very first 2 manuals Photon Paint	Pack 1 + the following Outrun, Obliterator, Better Dead Than Alien, Atax, Backlash, Stargoose, Hellbent, Quadralien	Pack 1 + Pack 2 + the following Competition Pro 5000 Joystick Mouse Mat, Dust Cover 5 x 3.5" DS/DD Disks
£379.99	**£399.99**	**£419.99**

Amiga 500	£359.99	Amiga 2000	£POA
Amiga 500/1084S	£614.99	Amiga 2000/1084S	£POA
A1010 Floppy Disk Drive	£134.99	A2010 3.5" 1Mb Internal Disk Drive	£136.99
A1084S Colour Monitor	£259.99	A2094 20Mb Amiga DOS Hard Drive	£389.99
1900M HI Res Mono Monitor	£99.99	A2092 20Mb MS-DOS Hard Drive	£342.99
A501 Ram Expansion/Clock	£134.99	A2058 Ram Expansion	£634.99
A520 Modulator	£22.50	A2088 PC XT Bridge Board	£459.99
MPS1250 Printer	£149.99	MPS1500C Colour Printer	£199.99

CUMANA DRIVES

1Mb 3.5" Floppy Disk Drive	£89.99	1Mb 5.25" Floppy Disk Drive	£121.99
1Mb 3.5" Floppy Disk Drive + PSU	£116.99	1Mb 5.25" Floppy Disk Drive	£133.99

SUPRA DRIVES

20Mb Hard Disk Drive A500/1000	£584.99	20Mb Hard Disk Drive A2000	£566.99
30Mb Hard Disk Drive A500/1000	£629.99	30Mb Hard Disk Drive A2000	£629.99
60Mb Hard Disk Drive A500/1000	£1079.99	60Mb Hard Disk Drive A2000	£899.99

PHILIPS MONITORS

CM8833 14" RGB/CVBS Med Res Colour £259.99 CM8852 14" RGB/CVBS HI-Med Res Colour £294.99

MATRIX PRINTERS

Amstrad DMP2160	£142.99	NEC P2200	£389.99
Amstrad LQ3500	£349.99	NEC P6	£542.99
Canon PW1080A	£309.99	Panasonic P1081	£218.99
Canon A-60 F	£423.99	Panasonic P1082	£252.99
Epson LX800	£275.99	Seikosha SP-108A	£169.99
Epson LQ500	£394.99	Seikosha SP-1200A	£189.99
Micro P MP135+	£149.99	Star LC10	£219.99
Micro P MP165+	£199.99	Star LC10 Colour	£249.99

LASER PRINTERS

Canon LBP-8 A2	£1790.00	HP Laserjet II	RING
Epson GQ3500	£1795.00	Panasonic P4450	£2030.00

GRAPHIC TABLETS

CRP A4/A3 Tablets	RING	Cherry A3 Tablet	£534.99
Summa Sketch Tablet	£412.99	Easy L A4 Tablet	£269.99

VIDEO DIGITISERS/ENHANCERS

DIGIVIEW Gold	£116.99	Rendal Genlock	£269.99
DIGIPIC Frame Grabber	£199.99	VO3 Frame Grabber	£569.99
Mini Gen	£102.99	VO3+ Colour Fram Grabber	£822.99

SOUND DIGITISERS/SAMPLERS

Pro Sound Designer	£67.99	AMAS	RING
Soundscape Sampler	RING	Sophus S5	£126.99
Future Sound	RING	Perfect Sound	£69.99

MIDI INTERFACES

ECE Midi Interface	£49.99	Midi Master 500	£30.99

MODEMS

Demon II	£82.99	Pace Linnet	£139.99
Designer	£102.99	Pace Series Four 1200S	£389.99
Mircom WS2000	£109.99	Pace Series Four 2123S	£259.99
Miracom WS4000	£169.99	Pace Series Four 2400S	£487.99

EMULATORS

64 Emulator	£57.99	Access 64	RING

CABLES

Standard Centronics Printer Cable	£7.99	Midi Cable	£2.99
Deluxe Centronics Printer Cable	£9.99	Modem Cable	£12.99
Twin Mouse/Joystick Extension Cable	£4.99	Monitor Cable	£7.99
4-Way Adaptor	£4.99	Monitor Extension Cable	£12.99

DISK STORAGE/HEAD CLEANERS

Disk Box for 40 x 3.5" disks	£7.99	Disk Box for 50 x 5.25" disks	£8.99
Disk Box for 80 x 3.5" disks	£9.99	Disk Box for 100 x 5.25" disks	£10.99
Disk Box for 120 x 3.5" disks	£11.99	Disk Box for 150 x 5.25" disks	£12.99
3.5" Disk Head Cleaner	£4.99	5.25" Disk Head Cleaner	£4.99

BLANK DISKS

SONY 3.5" DS/DD Unbranded Disks x 10	£13.50	SONY 3.5" DS/DD Unbranded Disks x 50	£64.00
SONY 3.5" DS/DD Unbranded Disks x 25	£32.75	SONY 3.5" DS/DD Unbranded Disks x 100	£123.00

SOFTWARE

WORD PROCESSING

Becker Text	£98	Protext v4.0	£69.00	VizaWrite	£82
Excellence!	£159	Pro Write V2.0	£71	Word Perfect 4.1	£179
Kind Words V2.0	£40	Text Pro	£47	Write & File (1 Mb)	£55

DATABASES

Acquisition V1.3	£196	K Data	RING	Superbase Personal	£69
Data Retrieve	£38	Mi Amiga File	£39	Superbase Prof	£173
Data Retrieve Prof	RING	Microfiche Filer	£63	Superbase Personal	£42

SPREADSHEETS

Hai Calc	£47	Logistix V1.15	£94	Maxiplan Plus	£113
K Spread 2	£60	Maxiplan A500	£76	VIP Professional	£76

DESK TOP PUBLISHING

City Desk V1.1	£82	Professional Page	£196	Publish/Partner Prof	RING
Pagesetter	£63	Publisher Plus	£82	Shakespeare	£118

Pagesetter Laserscript/Postscript Module £26

LANGUAGES/ASSEMBLERS/COMPILERS

AC/Basic Compiler	£154	Benchmark C Lib	£63	Modula 2 Standard	£69
AC/Fortran	£232	Benchmark IFF Lib	£63	Modual 2 Developer	£118
AC/Fort/Turbo Amiga	£406	Benchmark Simplifier	£63	SAM Basic	£76
APL 68000 Amiga	RING	Devpac V2.0	£45	MCC Shell	£35
Assempro	£47	K Seka Assembler V.5	£38	MCC Toolkit	£28
Aztec C Professional	£158	Lattice C V5	£190.00	True Basic	£57
Aztec C Developer	£245	Lattice C++	£281.00	T/Basic Runtime Sys	£57
Aztec C Commercial	£409	MCC Pascal V2.0	£62	Hisoft Basic	£56
Benchmark Modula 2	£110	Macro Assembler	£49	GFA Basic	RING

UTILITIES

Amiga DOS Express	£26	Gizmoz 2.0	£41	Newsletter Fonts	£20
Award Maker	£31	Goldspell 2	£24	Powerwindows 2.5	£55
Butcher 2	£24	GOMF V3.0	£24	Project D	£31
Climate	£29	Grabbit	£24	Quarterback	£39
Diskmaster	£39	Interchange	£39	Studio Fonts	£20
Disk 2 Disk	£41	Invotools	£50	Studio Magic	£55
DOS 2 DOS	£31	K Gadget	£23	The Calligrapher	£55
FACCII	£24	Lion Fonts	£31	Transformer	£25
Flipside	£24	Maxidesk	£53	X Copy	£24

ART/GRAPHICS/ANIMATION

Aegis Animator/Images	£82	Deluxe Productions	£107	Pro Video Font Libs	£55
Aegis Impact	£50	Deluxe Video 1.2	£49	Sculpt 3D	£67
Lights,Camera,Action!	£45	Digi Paint	£47	Sculpt 3D Animate	£99
Aegis Videoscape 3D	£113	Express Paint V2.0	£55	TV Text	£55
Aegis Video Titler	£87	Fantavision	£32	TV Show	£55
Animate 3D	£99	Modeler 3D	RING	The Director	£47
Animator Apprentice	£158	Page Flipper + F/X	£91	Turbo Silver	£110
Animator Appr Jnr	£47	Photon Paint	£49	Movie Setter	£55
Anim Appr Jnr Libs	£13	Photon Paint Exp Disc	£15	Comic Setter	£39
Deluxe Art Parts	£8	Photon Video	£79	Comic Setter Clip Art	RING
Deluxe Paint II	£49	Pixmate	£39	The Director Toolkit	£22
Deluxe Photolab	£49	Prism Plus V1.2	£47	Video Generic Master	£55
Deluxe Print II	£35	Pro Video	£126	Video Wipe Master	£55

COMPUTER AIDED DESIGN

Aegis Draw 2000	RING	IntroCAD	£47	Pro net	£374
Dynamic CAD V2.3	£374	Pro Board	£374	X CAD	£363

MUSIC/SOUND

A Drum	£28	Deluxe Hot & Cool Jazz	£8	Pro Midi Studio s/w	RING
Aegis Audiomaster II	RING	Deluxe Rock & Roll	£8	The Music Studio	£26
Aegis Sonix V2.0	£45	Instant Music	£19	Ultimate Sound Tracker	£28
Deluxe Music	£49	Music X	RING	Pro Midi Plus	£25

COMMUNICATIONS

A Term	£38	K Comm 2	RING	On Line	£38
BBS PC	£95	Maxicomm	£38	Ruby View/Term	£79

EDUCATIONAL

Descartes!	£24	Chicken Little	£20	Intellitype	£20
Galileo	£45	Little Red Hen	£20	AB Zoo	£12
Mathamation	£41	The Ugly Duckling	£20		
Aesops Fables	£20	Three Little Pigs	£20		

ENTERTAINMENT SOFTWARE

Most old and new titles available from stock.
Our prices may not be the cheapest, but our service is first class, as is our recorded delivery postal service!

What you can't see – ask for

Please make cheques/postal orders payable to SCC MAIL ORDER. All prices are inclusive of V.A.T. Courier/Overseas rates on request.
All prices correct at time of going to press. . . Please ring to confirm before ordering.
All Software orders over £30 P&P Free (UK only). Orders under £30, add £1 P&P. Carriage chargeable on all hardware/peripherals

VISA

S.C.C. MAIL ORDER

29 Crowtree Road, Sunderland SR1 3JU. Telephone: 091 565 5756

MENTOR

Intuition

continued from page 84

```
/* This is called ComDem because it demonstrates the communication
   prowess of Intuition. It will open a window in the Workbench screen
   and display a clock in its title bar whilst checking for key presses
   and people changing disks. This seems enough for starters. */

#include "exec/types.h"           /* Everyone does this */
#include "intuition/intuition.h" /* This is pretty obligatory too */

struct IntuitionBase *IntuitionBase;
struct Window *Window;

LONG time [3];

struct NewWindow NewWindow = {
      20 ,20, 300, 100, 0, 1,
      VANILLAKEY | CLOSEWINDOW | INTUITICKS | DISKREMOVED | DISKINSERTED,
      WINDOWCLOSE | SMART_REFRESH | ACTIVATE | WINDOWSIZING |
          WINDOWDRAG | WINDOWDEPTH | NOCAREREFRESH,
      NULL, NULL,
      "Dedicated to my fish!",
      NULL, NULL, 100, 25, 640, 200, WBENCHSCREEN};

char c; /* From keyboard scan to control program */


void main(), doIDCMP(), OpenStuff(), CloseStuff(), BuildTimeString();

/* main() actually does very little except delegate the work.
   I'm sure we all know someone like that...*/

void main(){

   OpenStuff();

   while (c != ' '){          /* This routine (and hence the program) exits   */
      c = 'q';                /* when the CloseWindow gadget or space bar is  */
      doIDCMP ();             /* pressed. Here would be the place for the     */
   }                          /* program to do something useful with the info */

   CloseStuff();              /* Keep thing separate so main() is small       */
}

void OpenStuff(){

   /* Open up the intuition library for use by moi */

   IntuitionBase = (struct IntuitionBase *)          /* These 2 lines are */
             OpenLibrary ("intuition.library", 0); /* one statement.    */
   if (IntuitionBase == NULL) exit (FALSE);        /* Just checking */

   /* Now open the window in WorkBench screen and check it exists.
      If something has gone wrong, give up after closing library */

   if ((Window = (struct Window *) OpenWindow (&NewWindow)) == NULL){
      CloseLibrary (IntuitionBase);
      exit (FALSE);
   }
}
```

```
void CloseStuff(){

   if (Window) CloseWindow (Window);
   if (IntuitionBase) CloseLibrary (IntuitionBase);
}

/* This next routine is the business end. Opening the window gives us the
   Exec message port which Intuition uses to inform us of the various
   events we requested in the NewWindow structure at the top of the program.
   The WaitPort () statement can be omitted but the program wastes more
   processor time then because we don't go to sleep. */

void doIDCMP(){
   struct IntuiMessage *message;
   static int ticks;

   WaitPort (Window -> UserPort);
   if (message = (struct IntuiMessage *) GetMsg (Window -> UserPort)){
      ReplyMsg (message);
      switch (message -> Class){

         case VANILLAKEY:  /* Has a key been pressed? main() gets c */
            c = (char) message -> Code; /* Code is actually a USHORT */
            printf ("Message -> Code =%d, c = %c\n", message->Code, c);
            break;

         case CLOSEWINDOW: /* Intuition only tells us we have to do it */
            printf ("Closewindow has been selected\n");
            c = ' '; /* I'm cheating here slightly since main() checks */
            break;   /* for the space bar which also quits the program */

         case INTUITICKS:  /* Get about 10 per sec but only act after 7 */
            if (ticks++ == 7){ /* Every 7 ticks */
               ticks = 0;
               DateStamp (time);  /* This is in the DOS library */
               BuildTimeString(); /* This is mine!              */
            }
            break;

         case DISKREMOVED:
            DisplayBeep (NULL);
            break;

         case DISKINSERTED:
            DisplayBeep (NULL);
            break;

      } /* end of switch */
   }
```

Intuition

cont. on next page

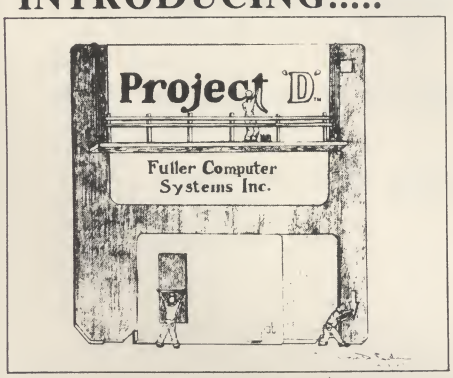
MENTOR

continued from page 87

```
void BuildTimeString (){ /* Takes array v and uses minutes & ticks to   */
                         /* build up a string for the window title      */
   char Tim [9];         /* The speaking clock no less. Format HH:MM:SS */
   USHORT Hours, Mins, Secs;

   Hours   = (USHORT) time [1] / 60;          /* Convert internal Dos format */
   Mins = (USHORT) time [1] - (60 * Hours); /* to 3 USHORTS before ASCII   */
   Secs = (USHORT) time [2] / 50;

/* The calculations may look obtuse but the conditionals are to pad */
/* out values which are less than 10. So 9:24:3 becomes 09:24:03    */

Tim [0] = (Hours < 10) ? '0' : (Hours / 10) + '0';
Tim [1] = (Hours < 10) ? '0' + Hours : (Hours % 10) + '0';

Tim [2] = Tim [5] = ':'; /* Colons to separate digits */

Tim [3] = (Mins < 10) ? '0' : (Mins / 10) + '0';
Tim [4] = (Mins < 10) ? '0' + Mins : (Mins % 10) + '0';

Tim [6] = (Secs < 10) ? '0' :  (Secs / 10) + '0';
Tim [7] = (Secs < 10) ? '0' + Secs : (Secs % 10) + '0';

Tim [8] = '\0'; /* Use NULL to terminate string */

SetWindowTitles (Window, Tim, -1);
```

In the following issue, Mike Nelson considers how menus may be employed in your Intuition programs.

INTRODUCING.....



An Evolution in Disk Utilities for Amiga™ Personal Computers!

FEATURING

- An easy to use, friendly and intuitive user interface.
- A powerful and fast disk backup tool that lets you make backups of your copy-protected Amiga software.
- A disk editing tool that lets you edit raw MFM tracks, AmigaDOS sectors and AmigaDOS files (automatically calculating new checksums).
- A disk cataloging tool that lets you maintain lists of your personal, public domain and commercial software.
- A unique backup tool for duplicating other disk formats including MS-DOS/PC-DOS and Atari ST.
- An easy to read, informative user manual is included.
- This product is not copy-protected in any way.

NOW SHIPPING!

$49.95 EA.

Includes shipping and handling!

Arizona residents add 6.5% sales tax.

TO ORDER

Send check or money order to:
Fuller Computer Systems, Inc.
P.O. Box 9222
Mesa, Arizona 85204-0430
Or CALL (602) 835-5018

Amiga is a trademark of Commodore-Amiga, Inc. Dealer Inquiries Invited

Public Domain Software for the Amiga

from £3 per disk all inclusive

★ Over 500 disks!
★ Membership not necessary
★ Fast service

We have one of the largest collections of PD software for the Amiga in the UK.

We currently stock:

- ○ FISH 1-161
- ○ AMICUS 1.25
- ○ SLIPPED DISK 1.14
- ○ FAUG HOTMIX 1.75

All the above are £3 each + 1 FREE when you order 10

We also have

- ○ PANORAMA 1.71
- ○ AUGE 1-25
- ○ T-BAG 1.23

2 catalogue disk sets available at £5 each which give details of the above collectors

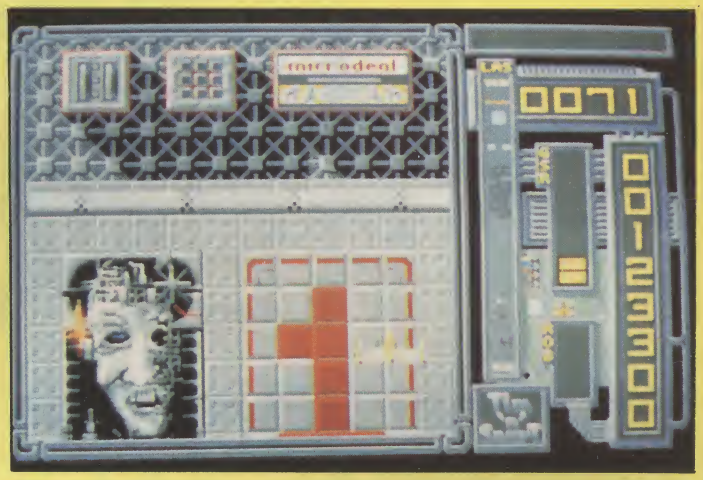
Our own special selection £4.00 Each

- ○ APDL # 3 ASSEMBLEY LANGUAGE COLLECTION
- ○ APDL # 6 CLI HELP Confused by CL17 This one's for you
- ○ APDL # 7 LANGUAGES Lisp, Prolog, Logo, Forth
- ○ APDL # 8AMIGA DISK DOCTOR Life saving programs
- ○ APDL # 14 BEST ARCADE GAMES
- ○ APDL # 15 BEST BOARD GAMES Backgammon, Othello, Yahtzee et
- ○ APDL # 17 BUSINESS COLLECTION Editor, spreadsheet & database
- ○ APDL # 22 MUSIC BOX 17 Great Tunes
- ○ APDL # 30 USEFUL UTILITIES
- ○ APDL # 35 NASA DIGI-SLIDESHOW
- ○ APDL # 35 EDUCATIONAL COLLECTION

Write or Phone for a FREE List

HARDWARE
CUMANA EXTERNAL DISK DRIVE £88.95
AMIGA A500 £355
AMIGA B2000 £385
DISK DRIVE £99.95
All prices are fully inclusive of VAT
PD Software now available for C64/128
Please write or phone for a list
★ JOIN THE CLUB! Interested in joining our user club?
Write or phone for details ★

THE AMIGA PD LIBRARY
Dept AC2, 140 Rushdale Road, Sheffield S8 9QE
PD Hotline 0742-588429 (9am-9pm)



GOLDRUNNER II

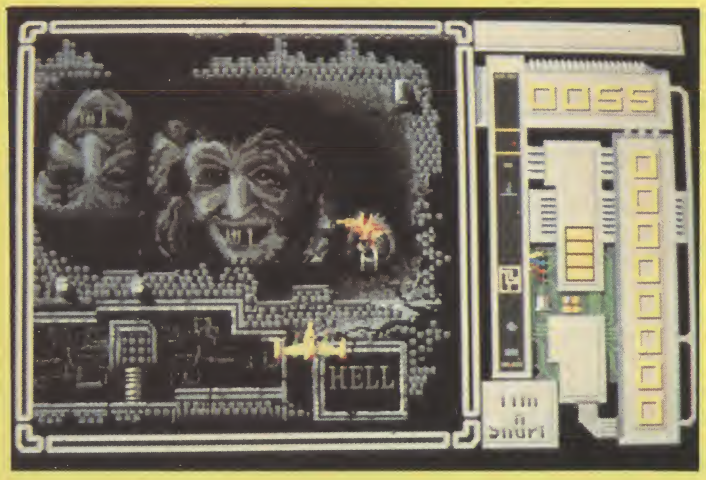
Microdeal

When the original Goldrunner was released it was generally well received, but much of its popularity can be put down to the absence of any real competition. Amiga (and ST) owners jumped at the chance of playing a half decent shoot 'em up on their new wonder machines, even if it were only a Uridium-clone turned through 90 degrees. Now the situation is very different with a number of established favourites in the 16-bit shoot 'em up field, so it was interesting to see how Goldrunner has changed with the times.

As before, the game is played in a window on the left of the screen, the right is again occupied by various scanners and readouts. Although at a glance the sequel looks almost identical to its forerunner, there have been some important changes in the gameplay. Instead of simply blasting every destructable on the current level, your mission now takes a more Defender-influenced route.

It is a story of prisoners, rescue pods, mutants and for a change, friendly motherships. These prisoners whizz around small track networks. Shoot their outer shell and a rescue pod is sent in to pick them up. Once a pod finds its target it sits on it letting loose a few defensive shots. Zap it now and the core is left for you to pick up and put down on the dropzone. Sort that lot out and the mothership comes along to warp you to the next level. Thankfully there are far fewer obstacles to dodge, so there's a lot more freedom to move around.

Most of the time the scrolling is perfectly smooth, but this comes at the cost of a reduced game window and very small aliens. It runs into problems when anything more than a few tiny sprites are on screen, and it is here that its ST origins are most prominent. I don't like to go on about the old ST conversion argument, but such a straightforward task should not set any problems for the Amiga, and it is about time more UK software houses started taking note of European and American standards (Denaris and Sword of Sodan for example).



Sound and graphics are both forgettable. The music is without either a good tune or beat, and the effects are merely basic warbles. Background graphics included on the master disk are a patchwork of blocks and tiles, but those included on the extra data disks are more imaginative.

Despite all of its familiar features, the inclusion of a more involving gameplay basis does make for a more enjoyable game than you might expect. The trouble is that everything is very unspectacular; no hyper-destructive weapons, inoffensive-looking enemies and a feeble effect as your ship bites the dust. At least an effort has been made to develop the gameplay of the original game, but even so Goldrunner II is behind the times.

T.H.

Graphics: 6
Sound: 6
Playability: 6
Value: 6
Price: ???

TO THE RESCUE!

Editing Floppy Disks – Part 3

In part 1 of this series, the general layout of Amiga diskettes was discussed, along with the basic information about using disk editors. In part 2, the structure of the directory blocks was covered in detail, including some suggestions for restoring or removing files from a directory 'by hand'. In this final part, the structure of the remaining files will be presented.

FILE HEADER BLOCKS

The first six words of a file header block are much like those of directories, but the usage is a bit different:

Word #0 – *File type – which is 1*
Word #1 – *Header key – the number of this block (integrity check)*
Word #2 – *Highest sequential number – number of blocks in this file*
Word #3 – *Data size – number of data blocks listed in this block*
Word #4 – *First data – number of the block where this file starts*
Word #5 – *Checksum*

Most of this is easy to understand. It is also very useful. The highest sequential number can tell you how many data blocks you should have, and you can hand-check the file against that number. Should the chain have been broken somewhere, you won't get the correct number of blocks, and may have to go down the list block in order to locate that vital data. The data size indicates the number of blocks listed in this block alone. If the file is longer than seventy-two blocks, there will be an extension block to list the next group of data blocks, and the number of the extension block will be the next-to-last longword in the block. The number of the block where the first block starts is necessary if you must trace a file by hand. You start there, find the location of the second block, and trace it through until you find the break, corruption, etc., that needs fixing.

The six words in the block header are followed by a table of seventy-two entries, just as in the directory block. In File Header Blocks, these slots are filled with the numbers of sectors in which the data is stored. The order is a bit unusual. Slot 77 holds the number of the first sector in the file, slot 76 the second, etc. By looking through this table, you will know exactly where your file is stored on the disk.

Following the list of data blocks, you will find that, just as in the directory block, words 78-127 hold information about this file, as follows:

Word #78-79 – *not currently used*
Word #80 – *holds the protection bits, rwed*
Word #81 – *the total size of the file in bytes*
Word #82-100 – *hold the file comment, or filenote*
Word #101-103 – *Date and time when the file was created*
Word #104-123 – *File name*
Word #124 – *Sector where the next file on this hash chain begins*
Word #125 – *Back pointer to the parent directory*
Word #126 – *Pointer to the first extension block. If zero, all the blocks are listed in this sector. If not, this is where the next group is listed*
Word #127 – *Secondary file type, $FFFFFFFD, or –3*

If a file were very long, it would have to be terribly important to merit one going through it sector by sector, but it can be done if you have a bit of understanding about the way the files are constructed on the disk. Almost all disk editors will automatically move from one block of a file to the next with a single keystroke, making this less onerous a chore than it first appears.

FILE LIST BLOCK

These are called "Extension" blocks in many other places. If the file requires more than 72 sectors, there will have to be a File List Block, of an Extension Block, to hold the overflow. Each sector used in the file must listed in one of these blocks. They begin like all other sectors; the first six fields are filled with information about this sector:

Word #1 – *File Type $10, or 16*
Word #2 – *Number of this sector*
Word #3 – *Number of data blocks listed in this sector*
Word #4 – *First data block number*
Word #5 – *Checksum*

Just as in the other files, this is follwoed by a table in which the next seventy-two sector numbers is stored. Should this still be too few blocks, there will be yet another extension file to store the next seventy-two, etc.

On these extension, words 78-123 are not currently used. The last four words are very much like those of the others:

Word #124 – *next in the hash chain, but always zero because this is not on the hash chain*
Word #125 – *back pointer to the File Header Block for this file*
Word #126 – *pointer to the next extension block, if any*
Word #127 – *secondary type, which should be $FFFFFFFD, or –3*

DATA BLOCKS

The other documented type of block is the data block. It is here that all actual data is stored. All of the others are used for locating the data. The first six words here contain the information about the sector itself, and the remainder of the

MENTOR

TO THE RESCUE!

Editing Floppy Disks – Part 3

block, 488 bytes, is filled with data. The six words in the header are:

Word #0 – *File type – for data block, 8*
Word #1 – *Number of the header block for this file*
Word #2 – *Sequence number – position of this block in the file*
Word #3 – *Data size – how many bytes of this block are filled*
Word #4 – *Next Data – number of the sector in which the file continues*
Word #5 – *Checksum*

The remainder of the file is all data. Should there be a need to change the data, a good editor will let you type over the bad characters with plain ASCII, and will then save it for you, correcting the checksum as it saves. Word #2 tells you how far into the file this block is, and Word #4 tels you which sector to read after this one. If you come to the end of the file and find that it is not really supposed to be the end, you can go back to the file header blocks and the extension blocks to see if you can pick up the missing part. Once located, the next block of the file can be connected to this one by editing Word #4 so that it points to sector in which the file continues.

Almost anything on a disk can be salvaged, by one method or another. By all means, try DiskSalv first if you need to recover a disk. But if that should fail, it is very good to have another method. This one is not easy. There is constant danger of a careless error causing even more damage. Everyone should have at least one good editor, however, and know how to use it. One of these days, that accounts receivable disk is going to be ruined, and no procedure will be considered too drastic or too difficult on that day.

If you should find it necessary to edit a file by hand, it must be done with considerable knowledge of the block contents. We have a variety of good disk editors among the public domain /shareware offerings. Sectorama is quite popular, and works well on hard disks as well as on floppies, but it uses an interlaced screen, which some people find hard to read. Many prefer DiskX (which requires that you use ARP1.1), Smart Disk, or Blockbuster. All work well if you know what you want to do. Anyone who knows much about disks will certainly do the work on a copy of the bad disk!

B.C.

Enjoy Your Amiga With SES

SOUTH EAST SOFTWARE

Enjoy Your Amiga With SES

For a Realistic Price and a Realistic Service

LEISURE	RRP	OURS
Afterburner	24.95	18.70
Arkanoid	24.95	18.70
Balance of Power	29.95	21.80
Barbarian	24.95	18.70
Battlechess	24.95	18.70
Bermuda Project	24.95	18.70
Better Dead Than Alien	19.95	15.60
Bionic Commando	24.95	19.95
BMX Simulator	14.95	12.60
Bubble Bobble	19.95	15.60
Capone	24.95	18.70
Captain Blood	24.95	18.70
Carrier Command	24.95	18.70
Dungeon Master	24.95	18.70
Eddy Edwards Super Ski	24.95	18.70
Elite	24.95	18.70
Falcon	29.95	21.80
Fighter Command	29.95	23.40
Fire And Forget	24.95	18.70
Football Manager 2	19.95	15.60
Flintstones	19.95	15.60
Hacker II	24.95	9.50
Hitch Hikers Guide	24.95	9.50
Ikari Warriors	24.95	18.70
Impossible Mission II	24.95	19.95
Interceptor	24.95	18.70
Joe Blade II	19.95	15.60
Karate Kid II	24.95	18.70
Legend Of The Sword	24.95	18.70
Menace	19.95	15.60
Ninja Mission	9.99	8.90
Obliterator	24.95	18.70
Operation Wolf	24.95	18.70
Pacmania	19.95	15.60
Paper Boy	19.95	15.60
Pawn (The)	19.95	18.70
Roadwars	19.95	15.60
Rocket Ranger	29.95	21.80
Sidewinder	9.95	8.90
Scrabble Deluxe	19.95	15.60
Star Wars	19.95	15.60
Starglider II	24.95	18.70
Thai Boxing	9.95	8.90
TV Sports Football	29.95	21.80
Virus	19.95	15.60
BUSINESS/UTILITIES		
A Drum	39.95	29.95
AC-Basic Compiler	189.95	143.00
Aegis Animator/Images	103.50	85.00
Aegis Sonix V2.0	57.50	45.50
Amiga DOS Express	29.95	23.40
Animal Kingdom	39.95	29.95
Animate 3D	125.00	99.50
Data Retrieve	49.95	39.50
Deluxe Music Con Set	69.95	51.95
Deluxe Paint II	69.95	51.95
Deluxe Photo Lab	69.95	51.95
Deluxe Print I	24.95	18.70
Deluxe Productions	139.95	109.00
Deluxe Video	69.95	51.95
Digi Paint 2.0	59.95	47.50
Digicalc	39.95	27.95
Disk 2 Disk	34.44	27.95
Drum Studio	24.95	18.70
Excellence	199.95	170.50
Express Paint V2.0	69.95	51.95
Home Accounts	29.95	21.80
Home Publisher	24.95	18.70
Instant Music	24.95	18.70
Intro Cad	59.95	47.50
K-Spread 2	79.95	59.95
Kid Talk	39.95	29.95
Kindworks V2.0	49.95	39.70
Maxiplan Plus	149.95	119.95
Music Studio	24.95	9.95
Page Setter	113.85	88.00
Pascal 2	89.95	69.95
Photon Paint	69.95	49.50
Pixmate	49.95	39.00
Pro Write V2.0	85.95	57.50
Sculpt 3D	85.00	67.90
Shakespeare	143.75	109.95
Shoot em Up Con Set	24.95	18.80
Superbase Personal 2	99.95	75.50
Superbase Professional	249.95	183.00
Synthia	75.61	67.50
VIP Professional	99.95	74.00
Word Perfect 4.1	228.85	177.00
Works (The)	99.95	75.50
Write & File	99.95	75.50

If It's Not Listed Please Telephone For Price And Availabilty or Send S.A.E For Full Current Price List

CAREFULLY SELECTED MAIL ORDER SOFTWARE FOR YOUR AMIGA FROM S.E.S.
IF YOU LIVE LOCALLY PHONE US! IF ITS IN STOCK WE WILL PERSONALLY DELIVER TO YOUR DOOR THE SAME DAY

"SOUTH EAST SOFTWARE",
5 SILVERLANDS ROAD, HASTINGS, EAST SUSSEX TN37 7DE
TELEPHONE 0424 721318

Prices Include V.A.T/P & P in the U.K. Please Add £2 Per Item for Overseas Orders
Please Note: All Goods Dispatched Via 1st Class Post in the U.K.
Please make cheques/postal orders payable to "SOUTH EAST SOFTWARE"
We now Stock a Limited Amount of ATARI ST Software. Please Ring for Details
All goods subject to availability and prices subject to change without notice

DPT Print

John Walker continues the third part of our series with tips on how to get the best in printing

However good your document looks on the screen, its real-life appearance will depend on the quality of your printer. Let's consider the six ways in which you can produce a printed version of your publication, mostly using variations on laser and dot-matrix technology.

Your choice is between:

●LASER PRINTERS that are PostScript-compatible. These output high quality text and graphics, thanks to their resolution of 300 dots per inch. They are the most flexible of all printers. But they are also for the very rich, costing at least £3,500.

You can hire one at around £570 a month - with the snag being that the minimum hire period is likely three months. Laser printers are getting cheaper; in the last two years their price has halved and their speed doubled. And other alternatives are opening up.

A sign of the times is Birmingham's Graphic Point, a High Street publishing centre complete with typesetters, scanners and DTP equipment. In Orpington in Kent, The U-Type, We Print Centre offers laser printing or typesetting facilities. Such centres are beginning to appear elsewhere. Prices vary, but you can expect to pay at least £15 an hours for computer time plus printing costs.

There are also bureaux that will take your document and produce a laser printed result. The cost is around £1 a laser-printed page. The problem is that, so far, these bureaux do not support the Amiga (shame!), but instead use IBM PCs or Macintoshes. The solution to this little difficulty is to save the PostScript file to disk and then transfer it to IBM or Macintosh format. Since a PostScript file is in standard ASCII format, that is not too difficult.

If you have an Amiga 2000 with a PC bridgeboard, or an A500 with Transformer, Commodore's slow software PC emulator, or the A1000's sidecar, then the transfer is straightforward.

An alternative way is to use Central Software's Dos-2-Dos program which can be used with the Amiga to convert files to and from the PC's MS-DOS format. Another way is to send the file to the bureau's computer using a modern and suitable terminal software.

PostScript-compatible lasers, which commonly have a two or three megabyte memory, can produce results which can look just like conventional typesetting. You need a magnifying glass to tell the difference. They usually come with a selection of different typefaces, which can be scaled to any size between 1 and 127 points, and manipulated in various ways.

●LASER PRINTERS, such as the HP LaserJet, or one of its many compatibles, are cheaper and are becoming ever more affordable, although they are still expensive. The cheapest machines are around £1,795, with the LaserJet Plus II selling for £2,249. They will either produce a screendump, in the same way as a dot-matrix printer, or use built-in formats so that they can produce near-typeset printing with a resolution of 300 dpi. Such laser printers tend to have a 512K memory fitted as standard, which is not enough to print a page that contains graphics which occupy more than quarter of a page. They are often supplied with only one font, the typewriter-like Courier.

●DAISYWHEEL PRINTERS, which resemble electronic typewriters, can be used with cut and paste methods to produce galleys of good quality print. The result can look most effective, especially when reduced

continued on page 94

WHOS GOT a good FACE?

Times Roman has become the most used serif font in DTP
ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnop

Topaz is a sort of serif font: ABCDEFG
abcdefghijklmnopqrstuvwxyz

New Century Bookman is an alternative serif font
ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijk

Ruby is a serif font: ABCDEFGHIJKL
abcdefghijklmnopqrstuvwxyz

Helvetica is the most used sans serif font in DTP
ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghi

Diamond is a sans serif font: ABCDEFGHIJ
abcdefghijklmnopqrstuvwxyz

Avant Garde is an alternative sans serif font
ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghi

Opal is a sans serif font: ABCDEFGHIJKL
abcdefghijklmnopqrstuvwxyz

A comparison of laser printer PostScript fonts and the Amiga's bit-mapped equivalents, which have unconventional shapes.

FREE PUBLIC DOMAIN DISK WITH EVERY BOOK PURCHASED!—SEE BELOW

Motorola 68000 Programmers Reference Manual (Motorola)	£9.95p
1001 Things To Do With Your Amiga (Tab)	£9.95p
Amiga for Beginners (Abacus)	£12.95p
Kickstart Guide to the Amiga (Ariadne)	£12.95p
Kids and the Amiga (Compute!)	£12.95p
Elementary Amiga BASIC (Compute!) (D)	£12.95p
Amiga Machine Language (Abacus) (D)	£12.95p
Amiga Programmers Guide (Compute!)	£14.95p
Amiga DOS Reference Guide (Compute!)	£14.95p
Amiga Tricks and Tips (Abacus) (D)	£14.95p
Inside Amiga Graphics (Compute!) (D)	£14.95p
Amiga C for Beginners (Abacus — NEW!)	£14.95p
Amiga Applications (Compute!) (D)	£14.95p
First Book of the Amiga (Compute!) (D)	£14.95p
Amiga DOS — Inside & Out (Abacus) (D)	£16.95p
Advanced Amiga BASIC (Compute!) (D)	£16.95p
Amiga User's Guide to Graphics, Sound, Telecom (Bantam)	£16.95p
Becoming an Amiga Artist (Scott-Foresman — NEW)	£16.95p
Amiga 3-D Graphics — Programming in BASIC (Abacus—NEW) (D)	£16.95p
Amiga Machine Language Programming Guide (Compute!) (D)	£17.95p
Using Deluxe Paint II (Compute!)	£17.95p
Learning C — Prog. Graphics on Amiga & Atari ST (Compute!)(D)	£17.95p
Amiga BASIC — Inside & Out (Abacus) (D)	£18.95p
Amiga Microsoft BASIC Programmer's Guide (Scott-Foresman)	£18.95p
Inside the Amiga with C (Sams)	£19.95p
Advanced Amiga C Programming (Abacus) (D)	£19.95p
Amiga Hardware Reference Manual (Addison-Wesley)	£22.95p
Amiga Intuition Reference Manual (Addison-Wesley)	£22.95p
Amiga ROM Kernel Reference Manual Exec (Addison-Wesley)	£22.95p
Amiga DOS Manual (Bantam)	£22.95p
Programming the 68000 (Sybex)	£22.95p
Amiga Disk Drives — Inside & out (Abacus — NEW) (D)	£24.95p
Programmers Guide to the Amiga (Sybex)	£24.95p
Amiga Programmers Handbook (Sybex)	£24.95p
Amiga Programmers Handbook, Vol 2 (Sybex)	£24.95p
Amiga System Programmer's Guide (Abacus) (D)	£29.95p
Amiga ROM Kernel Ref. Manual: Libs & Devices (Addison-Wesley)	£32.95p
Book Programs On Disk — All **ABACUS Titles marked with (D)**	£12.95p
All Other Titles marked with (D)	£9.95p

FREE P.D. DISK WITH EVERY BOOK ORDER:—Please Select from below:—
(A) Utilities 1 (B) Utilities 2 (C) Demo's (D) Blank Disk
LATTICE C VERSION 5 — Now In Stock! —RRP £249.95p OUR PRICE £184.95p

NEW SHOWROOM NOW OPEN! — Monday to Saturday 9.30am to 6pm
Come & See Us at:— 1st Floor. Drake House. 160 Drake St.. Rochdale.

ACCESS/VISA/MASTERCARD HOTLINE/ENQUIRIES TELE (0706) 43519
All Offers are subject to availability, & may change at any time. E & O E.
All Prices include P&P in U.K., Otherwise Add £2 per Item Abroad.
Send Cheque/P.O./ Access or Visa details to:— 16-Bit Software (Dept ACM),
24 Bankfield Lane, Norden, Rochdale, Lancashire, OL11 5RJ. (England).

ONCE BYTTEN — THE P/X PEOPLE

HARDWARE AT SOFT PRICES

Amiga A500 + Modulator	£369
A500 + Modulator + Tenstar Game Pack	£389
Amiga A5000 + 1084S Monitor	£639
Amiga A500 + 1084S Monitor + Tenstar Pack	£659
Amiga A501 512K Expansion + Clock/Calendar	£139
Cumana 3.5" Ext. Disc Drive–Switchable	£99
Supra 30Mb Hard Disc for A500/1000 or 2000	£629
Supra 60Mb Hard Disc for A500/1000	£1095
Supra 60Mb Hard Disc for 2000	925
Amiga 2000 (B) inc 1x 3.5" Drive	£1185
Amiga 2000 (B) + 1084S Monitor	£1420
Amiga XT Bridgeboard for 2000 (+ 5.25" Drive)	£495
Philips 8833 Monitor	£259
Commodore 1084S Monitor	£259
Citizen 120-D Printer 9-Pin	£137.50
Citizen HQP-40 24-pin COLOUR printer	£439
(Amiga compatible, inc. lead, colour kit, etc.)	
A500 Control Centre (Make life easy for yourself)	£45
Incontrol Prop joystick-yoke for Flight Sim II	£29.95
Digiview Gold PAL (A500/2000)	£119

Please note:
These prices can be reduced even further by our generous part-exchange allowances... Ring for a quote.

Software at Soppy Prices:

X-COPY (OUT MARAUDES MARAUDER!) OUR PRICE ONLY	£19.95
FALCON — YOU'VE HEARD ABOUT IT, NOW FLY IT! ONLY	£21.95
[illegible] SAY GOODBYE TO YOUR FRIENDS ONLY	£19.95
-ITS THE WAY ITS DRAWN!	£22.95

FLOPPIES AT FLIPPED PRICES
Our bulk buying enables you to buy **best** discs at **cheap** prices. They are all guaranteed for life and supplied with label sets (and sleeves with 5¼"). They are all **genuinely** double-sided but usable on either single or double-sided drives.

3½" DSDD 135tpi

10 boxed	10	25	50	100	250	500	1000
£11.50	£9.95	£24.50	£47	£89	£220	£425	£825

5¼" DSDD 96tpi

25	50	100	250	500	1000	5000
£10.50	£18.50	£32.50	£80	£157	£310	£1500

NB: All the above prices include VAT at 15%. Carriage is free on discs and software. Computers are £5, printers £5, monitors £10, UK only.
We are always looking to buy good used equipment for cash, but we'll offer even more in part exchange. Ring for a quick quote.

PHONE 01-304 2631 · TELEX 94070538-ONCE G

59 SWANLEY ROAD
WELLING, KENT DA16 1LL

VISA

SOFTWARE BARGAINS

GUARANTEED LOWEST PRICE - We will match or beat any other advertised price

Hobbyte COMPUTING
INCORPORATING Buskyte BUSINESS COMPUTER SERVICES

Photon Paint	34.95
Sonix	34.95
The Works	69.95
Transformer	19.95
Games - All titles 20% off RRP	

SOFTWARE PRICES INCLUDE VAT AND DELIVERY

PERSONAL CALLERS WELCOME AT OUR BRANCHES - PLEASE BRING A COPY OF THIS AD WITH YOU TO TAKE ADVANTAGE OF SPECIAL MAIL OFFER PRICES

FULL AND PART-TIME STUDENTS (SCHOOL OR FURTHER ED.) LECTURERS, EDUCATIONAL ESTABLISHMENTS, LOCAL AUTHORITY WORKERS, MEDICAL WORKERS, ETC.

IF YOU CAN PROVIDE AN ORDER ON HEADED NOTEPAPER, OR A LETTER FROM YOUR PLACE OF EDUCATION STATING THAT THE EQUIPMENT WILL BE USED FOR WORK OR STUDY PURPOSES, YOU ARE ELIGIBLE FOR SPECIAL LGEM/EDUCATIONAL PRICES - PLEASE RING IF YOU THINK YOU MAY ALSO QUALIFY:

AMIGA 2000, 1084S MONITOR, 3.5" DRIVE, 5.25" DRIVE AND XT BRIDGE BOARD, PHOTON PAINT
NORMAL PRICE £2295 + VAT **£1099** + vat

AS ABOVE, ALSO WITH 20 MB PARTITIONABLE AMIGADOS/ MS DOS HARD DRIVE
NORMAL PRICE £2994 + VAT **£1399** + vat

AMIGA 500 PACKS:

GAMES PACK
Inc. Modulator, Photon Paint, 22 games on 4 discs: Arcade, Adventure, Board and Shoot-em-up games, plus
Goldrunner, Karate Kid II, Spitting Image, Heli Bent, International Soccer, Winter Olympiad, Quadralien, Star Goose, Bubble Ghost
£399.99 inc. VAT

MUSIC PACK
Inc. Modulator, Photon Paint, 22 games on 4 discs: Arcade, Adventure, Board and Shoot-em-up games, plus
Sonix Music Package, Karate Kid II, Carrier Command, Goldrunner games
£429.99 inc. VAT

PROFESSIONAL PACK
Inc. Modulator, Photon Paint, 22 games on 4 discs: Arcade, Adventure, Board and Shoot-em-up games, plus
The Works Database, Spreadsheet and Word Processor, with Mail Merge and Spell Checker
£449.99 inc. VAT

EXPANDED PACK
Inc. Modulator, Photon Paint, 22 games on 4 discs: Arcade, Adventure, Board and Shoot-em-up games, plus
A501 RAM Expansion and Dragons Lair game
£549.99 inc. VAT

AMIGA 500/1084S PACK
As above, but with NEW 1084S Monitor, without Modulator
GAMES/1084S PACK £629.99 inc. VAT
OTHERS ALSO AVAILABLE

ORDERING

- Send cheque or Postal Order for total, plus £8 per hardware item (software carriage free) and VAT where appropriate, to DEPT AAU, Hobbyte Computers Ltd., 10 Market Place, St. Albans, Herts AL3 5DG If you have ACCESS or BARCLAYCARD, phone your order to our Sales Desk on 0727 56005.

2nd 3.5" DRIVE FOR A500 £87
880 K, HIGH QUALITY WITH 12 MONTH GUARANTEE
AMIGA A500 MODULATOR £17
DIGITISING PACKAGE £349
DIGIVIEW, VIDEO CAMERA, LENS & LEADS
A501 RAM EXPANSION £119
PRICES ARE EX-VAT

Prices correct at time of going to press, but are subject to change without notice. E & OE.

Chameleon ADAPTING TECHNOLOGY TO YOUR ENVIRONMENT
10 MARKET PLACE
ST ALBANS · HERTS · AL3 5DG
TEL: (0727) 41396/56005

1G THE ARNDALE CENTRE
LUTON · BEDS · LU1 2PG
TEL (0582) 457195/411281

continued from page 92

DPT Print

in size. But they cannot print graphics.

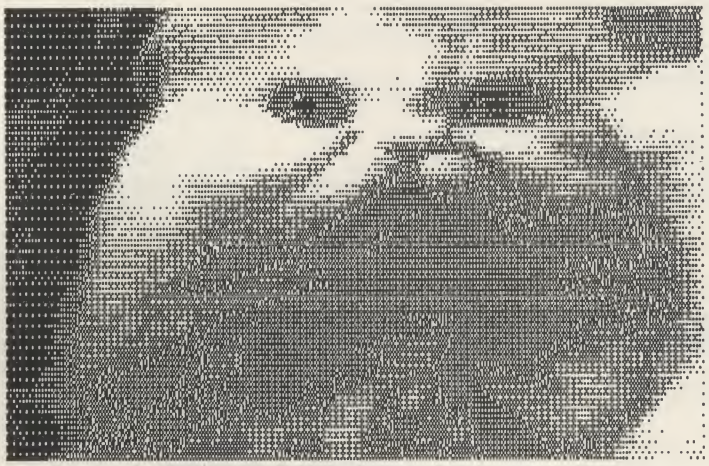
●DOT-MATRIX PRINTERS can print both text and graphics. The new 24-pin printers can achieve better results than the older 9-pin models, but printer drivers for 24-pin machines may still be hard to find.

screen allow you to set seven different densities of print, although the number available to you will depend on what printer you use, and to use anti-aliasing to smooth away the worst of the jaggies. The new drivers are also much faster than the old and support more printers, including Epson-compatible 24 pin dot-matrix

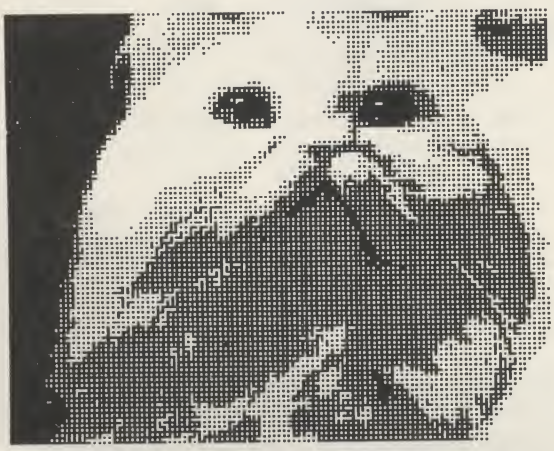
Halftone, which simulates the dotty approach to reproducing graphics used by newspapers, and Floyd-Steinberg, which is more random and works well on digitised photographs of people. New options for colour printing improve the dithering patterns, but reduce the number of colours available to you. The results provide a truer colour reproduction than the 1.2 drivers.

●THERMAL PRINTERS resemble dot-matrix in many respects, except that instead of using printheads that strike a ribbon with a series of pins,

Halftone printed from Professional Page



Printed from PageSetter 1.0



As reproduced in Prowrite 2.0

Image printed from Publisher 1000

Dot-matrix printing of text and graphics suffers from *jaggies* - those stepped edges, found on circles and larger typefaces. The resolution of 9-pin printers is low - 72 dots per inch - and cannot do justice to digitised photographs. The quality of dot-matrix is likely to improve when the new Amiga printer drivers, to be found in the 1.3 Preferences, become available to all.

You will find that you can control the print in many more ways, using a series of options that take up two screens. The choices on the second

machines and most colour printers.

You are likely to get the best results by selecting Single rather than Fanfold as the paper type on the first screen. This advances the paper by a smaller amount so that the dots overlap when printed vertically, thus getting rid of the thin white lines that sometimes appear when the 1.2 drivers are used.

The 1.3 Preferences also let you choose between three types of grey-scale shading when printing graphics: Ordered, which is the method used on 1.2 drivers,

they use heated pins that melt the ribbon on the paper. This technique works best on reproducing colour graphics, but is less effective on text.

●INK JET PRINTERS are also a variation on dot-matrix technology, spraying dots of quick-drying ink on to the paper through a series of nozzles. Ink jets are improving in quality, but tend to be less reliable than dot-matrix printers and are more expensive.

They score over other types of machines for colour printing, pro-

continued on page 96

Free Membership

For free membership to the GOLD CLUB simply purchase any of these titles listed below from us. Gold membership means you will get an extra discount from our listed prices (which are already good value) you will also receive our P.D. catalouge for ST or Amiga.

Don't Delay Send Today

ATARI ST

Title	RRP	OURS
Falcon	£24.99	£20.00
LED Storm	£19.99	£16.50
Operation Wolf	£19.95	£16.50
Baal	£19.95	£16.50
Lombard Rally	£24.95	£20.00
Joan Of Arc	£19.99	£16.50

COMMODORE AMIGA

Title	RRP	OURS
Dragon's Layer	£44.95	£37.50
Sword Of Sodan	£24.99	£20.00
Hybris	£24.99	£20.00
Falcon	£29.99	£25.00
LED Storm	£19.99	£16.50
IK+	£24.99	£20.00

SPECIAL OFFER

10 3.5″ Disks with free library case £9.95
All Disks are Double Sided Double density, 135 TPI, Guaranteed

10 5.25″ Disk with free library case £4.95
All Disks are Double sided Single Density, Guaranteed

All software is available and advanced orders can be taken for any title not yet released. All orders are sent by first class post. Gold Club membership is £3.00 without any purchase. p & p FREE in United Kingdon Overseas orders welcome. Add £3.00 p & p

VISA

Media Gold (0532) 304384, Dept. AU1, Marcon House, Wyther Lane, Kirkstall, Leeds LS5 3BT

Written any P.D? Send it in to us

Tel: 0860-254344

BYTES & PIECES,
37 Cecil Street,
Lytham, FY8 5NN

Dear Amiga User,

We would like to give you the latest news on our line of products including some exciting new ones, but before that just to remind you about the existing line.

1.5 meg internal Spirit expansions. £150 for the A500 and £375 fully populated; and £175 for the A1000 or £399 fully populated. Faster PAL chips (A1000) £19.95. Faster 68000 8 mhz £19.95 or 10 mhz £25. 512K of DRAMS £85. A500 512K boards with clock and populated £110. The new A500 2 meg internal board uses 1 meg chips and is £199 for OK. Send a disk with an S.A.E. for the Spirit demo.

We can now get the 8520 interface chips POA. 64K centronics printer buffers £64 with power supply. Screen filters to cut the glare and help reduce the flicker to enhance the image £35. 1.3 Enhancer kits available with 1.3 rom 1.3 Workbench, extras and manual. POA.

Postage on the above is £3 for the boards and £2 the remainder. Access and Visa welcomed.

We have been overwhelmed by the success of our very affordable Hard Drive Systems. We have obtained read speeds of 370K a second from some of the drives (faster than a RAM Disk). We can sell you a ready to run system or the parts you need to set up your own. Choose the controller card for your application. Two drives on one system? Certainly. A 6 headed drive, 42 meg complete system at £499 (£11 courier).

Where can you get a 105 meg drive for £750? Us of course, you would expect to pay over £1,200 elsewhere. Let us quote you a system for your A500/A1000. Although we will supply 20 meg we soon find these drives fill up quickly and the user is soon disappointed. Commodore's A590 20 meg drive will sell for £590!!! See how much you save with us. We are on the street with ours now; CBM state September for theirs. We leave you to decide.

Now the really good news. A500/A1000 owners will not now need to buy an A2000/A2500 when we release our 2000 clone expansion box. With its own power supply, four slots for 2000 cards and three slots for AT cards, one for XT cards and room for a 5.25 floppy, full Zorobus spec and autoconfiguring, ability to use CBM's bridgecard and only £399!!! Expect release date before the CBM Show.

You will also be able to slot onto it our new 68030 (no misprint) with 2 meg ram and running at speeds of 32 mhz with the ability to turn down the speed for full software compatibility and at under £1,000. To be released soon.

A brand new software package called VIDEO EFFECT 3D is to be released by us very soon. All the others rolled into one and more, best describe it. Demo disk available, send your disk and an S.A.E.

More new goodies on the horizon and these will be shown at the Commodore Show in June. Come and see us there or send an S.A.E. with two disks for both demos. A1000 owners are safe with our support.

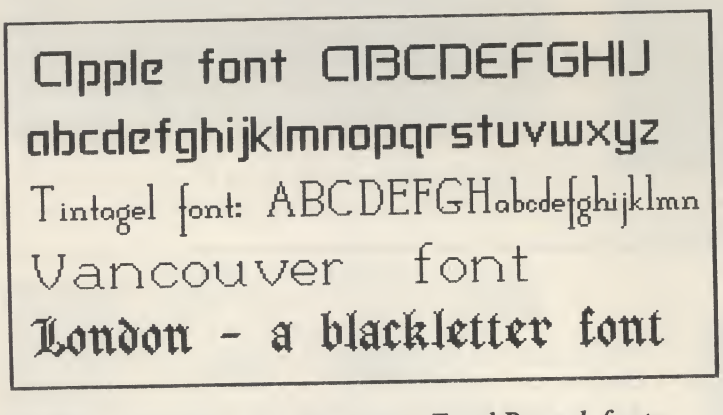
MAIL ORDER ONLY. CALLERS BY APPOINTMENT ONLY. 10am TO 5pm MON TO FRI. 1pm SAT.

continued from page 94

DPT Print

ducing the best results so far available. But a good ink jet will cost nearly £1,000. Once you have produced a satisfactory print of your publication, you still haven't finished. You have, in effect, a master copy. The next step is to produce multiple copies. How should you do it? If you have used cut and paste methods to produce the master copy, then you're restricted to two choices. You can either photocopy your master. Or you can take it to a printer to print it conventionally, using offset lithography. In this instance the printer will photograph your original to produce a copy on film, make a printing plate from the negative and then print from that.

Examples of Zuma fonts which can be used for headlines.



A few examples of the many EarthBound fonts.

Photocopying is an economical approach on short runs of under 100 copies. On publications produced on a dot-matrix printer it can produce a better-looking result, giving you a greater density of print. But photo-copiers are not always good at reproducing graphics.

If you have used DTP software and a printer to produce a master copy, then you have the additional option of printing your copies by the same method. It is only worth doing this if you need few copies. Dot-matrix printers are slow when doing a screen dump and will take around 5 minutes to print every copy of a page from a DTP program.

A laser printer is much faster, although it is slow to begin with. It may take ten minutes or even longer to produce the first copy of a page containing complex graphics. But after the first one is printed, a laser will roll out further copies every six seconds or so. Even so, if you are printing a lot of copies it is best to revert to traditional offset printing methods. To get the best results you can hitchhike in the footsteps of Douglas Adams and print it using a PostScript-compatible Linotronic typesetter. You can also get excellent results by creating your master-copy on a laser printer, which forms the camera ready for conventional printing by offset lithography.

Professional printers can either produce a typeset publication from a word-processed document containing embedded codes or by means of a PostScript-compatible image-setters. Such methods will give the best results, but at the highest cost.

There is a dazzling future for high quality desktop printing. PostScript-compatible colour printers, using a thermal transfer system, have just become available, for those with around £20,000 to burn. And two other trends are important. The good news is that ordinary laser printers will drop in price to below £1,000. I expect this price barrier to be broken by the end of the year.

At the same time the quality of the laser printing will improve. Just available is a laser printer providing a resolution of 600 dpi, which is four times that of other printers. It will set you back a cool £15,750 at the moment. But that, too, will one day be affordable - although by that time we shall probably all be using new Amiga 5000s to produce our own daily newspapers!

J.W.

WILL THE REAL 'AUI READERS' (IS IT YOU UNCLE JACK?) PLEASE STAND UP!

Ok, Uncle Jack, we know it's you

AUI readers are truly amazing. Every month we receive hundreds of letters congratulating, complaining, and cajolling the editorial staff. Some of you have even noticed a particularly sinister American slant to the articles ('We will not waste this precious editorial space commenting on our colonial cousins!' – Ed.) ... BUT the real question is: do you actually read AUI cover-to-cover every month?!? *Wanna prove it?*

Two winners of this month's competition will win 1/2 Meg expansions for an A500 donated by Bytes & Pieces, and 10 runner-ups will receive annual subscriptions to AUI. Now, if you were a TRUE AUI reader, you would recall instantly where the following statements were located:

1. 'The oriental sunset ripples in the distance while all kinds of creatures crawl around the rest of the screen.'
2. 'The program will start by prompting you to insert the disk to be corrected, then follow the on-screen instructions.'
3. 'Surprisingly, area filling is very, very, slow.'
4. 'If a program or routine does not run as expected then try to identify the area in the source code that may be causing the problems.'
5. 'Try it, even buy it, but if you hate it, do not say I did not warn you.'
6. 'Your ship uses a combination of rotate and thrust controls for movement, and a forward-firing cannon for blowing away the space debris.'

There you have it – statements made by the AUI editorial staff, contributors, (even our pet advertising copywriters) and whoever else happens to be in the office during press night. Put the correct page number and name of the article for each statement on a postcard, and send it by June 15 to:

'YOU BET I READ AUI' Competition
c/o Amiga User International Magazine, 40 Bowling Green Lane, London EC1R ONE
We will select the winners at random from the first eleven correct entries received (and we promise not to misplace the answers!).

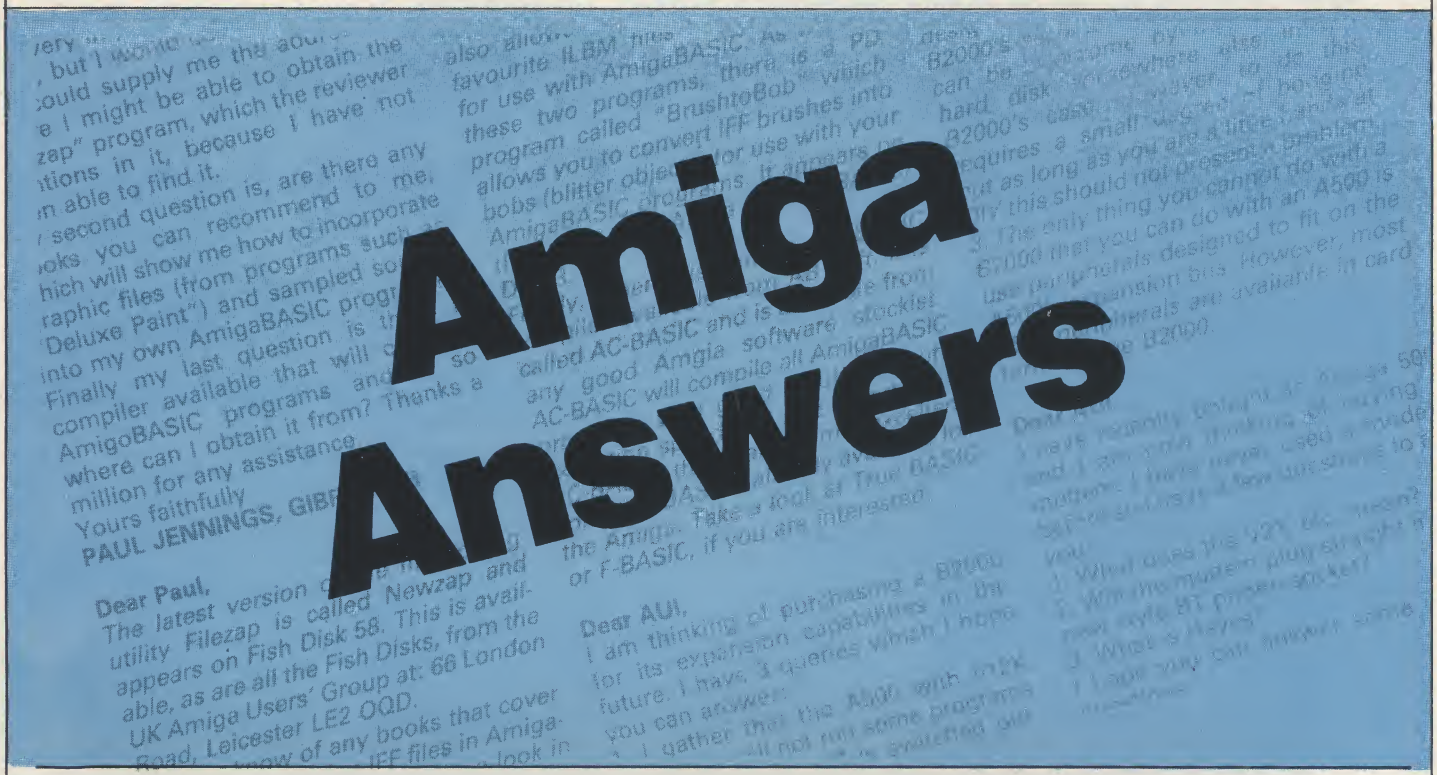
HEAR YE! HEAR YE! HEAR YE! The FUTURE has arrived!

Back in the days of old, when the computer perched on the end of your desk occupied several rooms, and when people actually bought computers without digital to analogue converters (you can believe it? How archaic!) .. stereo sampling for the masses was virtually 'unheard' of. Thanks to Applied Visions, creators of FutureSound 500 and sponsors of this month's competition, all that has changed. We are giving away no less than 5 FutureSound 500 stereo samplers to lucky AUI readers and the next 20 correct entries pulled out of the winning hat will be able to buy a FutureSound 500 sampler for £20 off! All you have to do is answer the following questions:

1. What is a 'snap shot' in Amiga sound terms?
2. How do you adjust the level of incoming sounds on the FutureSound 500 module?
3. How many RCA phono sockets does the FutureSound 500 sampler have?
4. Name the two ways in which sounds can be stored.
5. What is the price of FutureSound 500 and where is it manufactured?

You can find the answers to this competition elsewhere in this issue of AUI. Quick now – everyone is racing to those pages this minute and finding the correct answers. This very second they are writing the answers on a postcard and mailing them to:

FutureSound 500 Competition
c/o Amiga User International, 40 Bowling Green Lane, London EC1R ONE
HURRY! The winner will be drawn from all correct replies received by June 15.



Amiga Answers

Yuri Large tracks down the tips that keep you on top!

Dear AUI,

Please excuse my lack of knowledge about the Amiga but having only received my Amiga this Christmas, and only having limited time to experiment on it because of school, I am still stuck.

Please can you tell me where to find "Disk Doctor". I have heard it is on Workbench 1.2 but I can't find it on there.

Could you also recommend a Virus Killer as I have (or rather my Amiga has) been infected and I need one to clear some of my disks up. Keep up the good work. I think AUI is the best mag around.

Thanking you in advance,
Richard Wykes, Berkshire.

Dear Richard,

The DiskDoctor is a small program that is used to try and rescue data from a corrupt disk. It can only be run from the CLI, and therefore does not have an icon. DiskDoctor can be found in the "c" directory of your workbench disk, along with all the other CLI commands. To invoke it, just open a CLI window and type "DiskDoctor df0:". The program will start by prompting you to insert the disk to be corrected, then follow the on-screen instructions. Don't expect miracles, and make sure that you copy your data to a fresh disk before reformatting the faulty disk.

There are a wide variety of virus killers in the public domain. The one that I would recommend is called VirusX by Steve Tibbett, which can be found on Fish disk 158.

Dear AUI,

I have recently purchased an Amiga 500 and I am extremely happy with it, except for one problem - the modulator.

The modulator has a tendency to stick out too much. I was wondering if there are any leads available for it so that it could be kept near the side of the computer. If there is one, is it a parallel or serial lead, where can I get one and at what price?

Thank you.
Yours faithfully,
Raymond Ramdass, London.

Dear Raymond,

There is such a thing as a modulator extension lead. It is available from Trilogic in Bradford (telephone number 0274-691115). However, it is not the same as either a parallel or serial lead, neither of which will work.

Dear AUI,

When I purchased my Amiga 500 plus all the bits I told the company concerned I wanted it just for graphics and titles for my home video. They advised me that the software I would need would be Photon Paint and Deluxe Photolab plus Deluxe Video for animation. I find it impossible to animate using Deluxe Video. Can you suggest an alternative for use with the above software.

Yours faithfully,
Ken Sparkes, Middlesex.

Dear Ken,

Unfortunately none of the programs you have bought are particularly good for animation if at all. Deluxe Photolab and Photon Paint are painting packages with no ability to animate, and Deluxe Video only has a limited ability to animate objects.

For proper animation facilities I would suggest either Fantavision or MovieSetter. The former, Fantavision is not only reasonably priced but is also very quick and easy to use. Used in the correct manner it can produce some excellent results. MovieSetter is a more professionally biased program, which has a greater ability to manipulate IFF images imported from other programs. If possible, as usual, I would recommend that you try before you buy!

Dear AUI,

I would be pleased if you could assist with the enquiries that follow. I use an Amiga 500 with 1 Mb of memory.

I have tried creating the Bobs and Sprites in the Basic Object Editor on the 1.2 Extras disk. I have done this and saved as shown in the Amiga Basic manual. However, when I try to call up the saved Bobs and Sprites to run programs (such as "Ball" shown on pages 91 and 92 of the Amiga Basic manual) I get a "File not found message". I've tried using inverted commas, capitals and lower case but cannot get the item created in Object Editor to come into use.

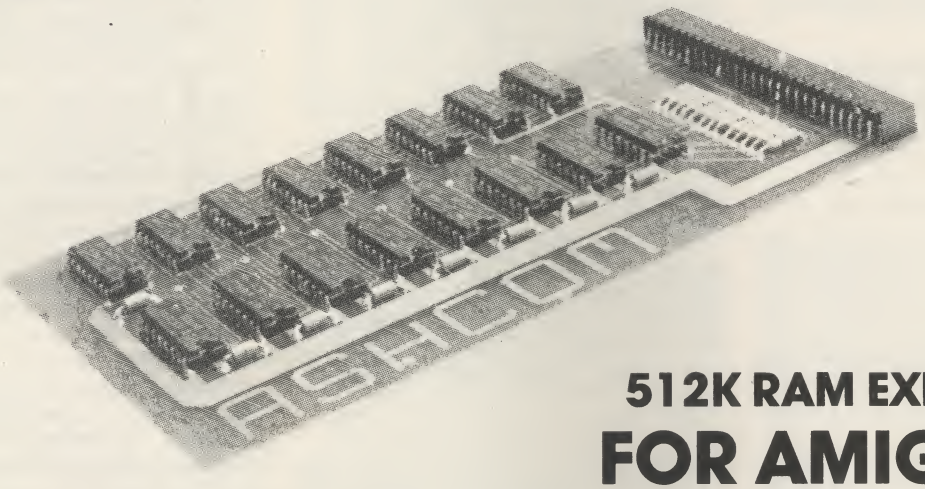
I use the example shown on page 92 of the Amiga Basic manual. Any suggestions?

Also, any details would be appreciated on the use of the Speak Handler on

ACCESS

NEW ASHCOM

VISA
VISA
(0530) 411485



512K RAM EXPANSION FOR AMIGA 500

ONLY £99.95 INC VAT

PHILIPS 8833 COLOUR MONITORS £200 INC VAT

LIMITED STOCK

ONLY FROM ASHCOM, 10 THE GREEN, ASBY-DE-LA-ZOUCH, LEICESTERSHIRE, LE6 5JU. TELEPHONE (0530) 411485

ASHCOM IS A TRADING NAME OF ASHBY COMPUTERS AND GRAPHICS LTD

GIVE YOUR AMIGA THAT PROFESSIONAL TOUCH WITH A DIGIVISION MULTI-FREQUENCY COLOUR DISPLAY MONITOR

Choose between:-

- **THE MAGUS:-** A high performance, 20" multi-frequency desktop monitor for only £1,100 (half the price of many comparable performance monitors).
- **THE AUTOSYNC 12":-** A high resolution, 0.28 dot pitch, metal cased multi-frequency monitor; an ideal first or second monitor for the professional Amiga user for only £399 (usually £975).

Our multi-frequency monitors are ideal for use with products such as Flicker Fixer*.

- **THE CD12:-** A very high resolution 12" metal cased, single frequency monitor; ideal for the first time Amiga user giving quality colour graphics and word processing, for only £199 (usually £886).

Connection leads available at £17.00, all prices exclude VAT and postage (postage is £19.93 for the 20" and £14.78 for the 12").

BUY TODAY AND PLAN FOR YOUR FUTURE!

Digivision

For further information contact:

Judi Ogilvy, Digivision Ltd, 163 Parker Drive Leicester LE4 0JP.

Tele: 0533 351224 Tx: 341382 Fax 0533 350069

DESIGNED AND MADE IN BRITAIN

* Flicker Fixer is a registered Trade Mark of Microway Inc.

NEW! — BEGINNERS GUIDE TO AMIGADOS — NEW!

This is a new and effective way to take you from a beginner to an expert on AmigaDOS. The package consists of a guidebook, a tutorial DISC, a crib card and FREE additional software which could cost you over £20 to buy elsewhere.

This is a clear and well thought out guide to AmigaDOS. It is the easy way to learn about the power of AmigaDOS. It takes you by simple steps, with many examples through the AmigaDOS commands. The emphasis is on learning through experience and doing — not just reading like most other books. It shows you how to set up a simple boot disc with your own customized messages that will boot in seconds (very much faster than workbench!). It will show you how to make your Amiga independent of the workbench disc — no more "Please insert workbench disc". It shows you how to include your own pictures (e.g. from DPaint) on your boot up sequence and MUCH MUCH more. The disc includes a password system which will prevent unwanted users from using your Amiga! The disc also includes a gallery of pictures.

Guidebook, Disc and Crib card only £12.95.

U.K. P&P FREE and by FIRST CLASS post.
Overseas orders welcome —
Payment in pounds sterling please.
Europeans please add 50p.
Outside Europe please add £1.50 for airmail.

Cheques/P.O.s to:

WIZARD SOFTWARE (Dept A7)

20 Hadrian Drive, Redhills, Exeter, Devon EX4 1SR

1.3 Workbench. The Workbench 1.3 manual on pages 3-7 and 3-8 shows how to mount speak to read the WB startup sequence. When entered in CLI this indeed speaks, but not in the female voice it says it should have.

I wonder if you are able to tell me how to enter the Speak Handler details:

Speak: Handler = L:Speak-Handler
Stacksize = 400
Priority = 5
Globvec = -1
#

as shown on page 3-7. Is this whole description supposed to be entered in shell or CLI? It cannot be entered as returning after each line executes it, yet the manual says the "#" sign should be on the last line. However, all I get is an "unknown command" error after I try to enter each line.

Any help on this and how to save Speak as a filename in order to get spoken output from word processors would be greatly appreciated. I use Scribble, WordPerfect and Write & File - is the Speak saved as part of the file, e.g. Document 1:Speak?

Your assistance would be very much appreciated.

Yours,

Alex McQueen, Edinburgh.

Dear Alex,

When referring to a file to be used by an AmigaBASIC program you must either specify the full path e.g. Extras: Basic Demos/Ball, or you must use the "CHANGEDIR" command to make the current directory the one in which the file you are using is situated e.g. CHANGEDIR Extras:BasicDemos. If you do not, you will get the "File Not Found" error; don't forget that AmigaBASIC cannot look beyond it's current directory without guidance!

The "SPEAK:" device is a new edition to Amiga Dos version 1.3, which is now (finally) in the shops. It can be used in the same way as a disk drive or the ram disk, apart from the fact that any file sent there is translated and spoken immediately by the Amiga rather than being stored. You can use it when saving a file from a word processor or copying a file using the CLI. The output from either operation will be spoken by the Amiga. For instance, when using Scribble!, specify the directory as "SPEAK:" and the filename as "Anything", then click on "Store" et voila, your Amiga speaks the document you are currently working on. Using the options provided you can alter the voice to your own taste. In fact, the female option does work. However, to hear it properly you also need to increase the value used for the pitch of the voice. There is very little difference between the male and female voice at the same pitch!

The entry for "SPEAK:", that you mention, has already been entered. It is not an entry from the CLI, but it is an entry in the "mountlist". The "mountlist" is a text file listing all the available devices with their parameters, and is situated in the "devs" directory on the Workbench. These entries can be mounted using the CLI "Mount" command. In the "SPEAK:" device's case the command would be "Mount SPEAK:". However, on Workbench 1.3 the "SPEAK:" device is automatically mounted in the startup-sequence, so that it is ready for use immediately.

For those of you who have not already invested in the Amiga DOS 1.3 Enhancer Pack, "SPEAK:" is one of the many enhancements included. You can buy the pack from your local Commodore dealer for just £14.95, and it's well worth every penny!

Dear AUI,

I've been reading your magazine for quite a while and I was wondering if you could help me.

I am an Amiga 500 owner and I would like to know if there is an expansion board which could make the Amiga 500 IBM compatible. If so, are there any 5.25" disk drives for the Amiga 500?

Please help, I'm desperate!!

Yours faithfully,

J. Fairley, Bemmel, Holland.

Dear Mr. Fairley,

There is not a hardware based IBM emulator available for the Amiga 500 at present. However, there is a software emulator which is called the Transformer. This only works with text based IBM applications, which it will run at about a quarter of the speed of a standard XT. It costs approximately £40 from good Amiga stockists.

Cumana produce a 40/80 track switchable drive, which is suitable for use with the Transformer. This drive comes complete with MSDOS driver software to allow use of standard 360K PC disks with the emulator for approximately £150.

Dear AUI,

My wife bought me Write & File for a present whilst on leave in the UK from a distributor somewhere in the Newcastle area.

I don't know what the opinion is of this program in the UK, but mine is of bewilderment that a program like this is available to the general public. Is there any advice you can offer on what can be done? I have written to the manufacturer "Softwood" in America but have received no reply as yet. My problems with the program are too numerous to mention.

Secondly, is it possible when loading a disk with forty or more files to speed up the loading by using sub-directories.

Yours faithfully,

Terence J. Evans, Cairo, Egypt.

Dear Terence,

There is very little that you can do about software that you find unsatisfactory. Your only course of action is to write to the manufacturer as you have already done. I have dealt with Softwood myself previously and I believe them to be very helpful. One thing I would advise with "Write & File" is that it works better with large amounts of memory.

You can speed up the reading of directories by putting files into sub-directories. It is similar to filing lots of loose sheets of paper; it takes less time to find the sheet of paper you want because you know which file to look in!

Dear AUI,

I own an A500 and around a year ago purchased a copy of Flight Simulator II. However, occasionally the program crashes, leaving a confused screen making it necessary to re-boot the program. Despite obtaining a new copy of the program, the program still crashes. I wonder if it could be a bug in the program or indeed something wrong with the computer. The program is version 1.1. I hope you will be able to throw some light on the problem.

Is there a program that can test the circuits on the A500?

Yours faithfully,

J. Connors, Essex.

Dear Mr. Connors,

There is a bug in Flight Simulator II as you describe. Sub-Logic say that this bug does not arise when the program is run on American NTSC machines, and have just purchased a European PAL machine to try and solve this bug. As far as I know they have not released an amended version for Europe yet. I will keep you posted!

Unfortunately I do not know of any diagnostic programs available for the A500 as yet.

Dear AUI,

While I was messing about with CLI I came across a weird phenomenon. AmigaDOS opens up the Console device which allows ESC sequences to be sent to it. So it is possible to have italics, bold and inversed video on the CLI. To do this the "1›" has to be displayed and then all you do is type the ESC sequence for the required text. Also CTRL sequences are possible from the CLI.

CTRL-I Tabs and spaces

CTRL-G DisplayAlert (Flash the screen)

CTRL-K Vertical Tab (Move cursor up a line)

CTRL-L Clears the screen

CTRL-N Display the following text in NON-ASCII characters

CTRL-M Does the same as the RETURN key

The following are ESC sequences which can be sent by the CLI. All of the sequence must be typed, i.e. press the

AMIGA ANSWERS

ESC key first then the "[" and then the number and the letter "m".

ESC [0m Normal Text (Reset to normal to character display)

ESC [1m Boldface text

ESC [2m Change colour of text

ESC [3m Italics text

ESC [4m Underline text

ESC [7m Inverse video

ESC [8m Locks the keyboard

ESC [30m Makes the cursor the same colour as the background colour

The following change background, foreground and cursor colours depending on colour settings in Preferences. The list shows the colour changes for my own Preferences. As your colours may be different, the effects will not always be the same.

ESC [33m Blue cursor

ESC [34m Disappear

ESC [35m White cursor

ESC [36m Black cursor

ESC [37m Blue cursor

ESC [39m White cursor

ESC [42m Black background

ESC [43m Light blue background

ESC [44m Black background and white text

ESC [45m White inverse video

ESC [46m Black background

ESC [47m Blue background and blue cursor

I would suggest that people experiment with these ESC sequences. As I said before, the best way to find out is to try them on your machine. I hope this will help somebody out there! These commands could also be used with the Prompt command, but I am not sure how! One more point, I think this magazine is brilliant. I'm saying that just to make sure this letter gets printed! (Just kidding.)

Christopher Collett, Birmingham.

Dear Christopher,

*Thanks for the information. The above control and escape codes can be used with any CLI commands which use a text string as an argument. To use the control codes just enter them as usual. To use the escape codes replace the escape key by "*E". Try these examples:*

*Prompt "*E[45m*E[36mHello!› *E[0m"*

*Echo "*E[1m*E[2mHello again!*E[0m"*

With experimentation you can produce some very flashy looking script files for us with the CLI "execute" command.

Dear AUI,

I have just purchased an Amiga A500 V1.3. Since then I have purchased many Amiga titles. However, I was not warned by Dixons that certain titles do not work on the new V1.3.

I tried returning titles that did not load to the shops I bought them from and have been turned away with no joy. Please, when you review games, let V1.3 owners know whether these titles work and warn your readers.

Yours hopefully,

James E. Flowers, London.

Dear James,

The advent of V1.3 has meant that the programmers who have not stuck to Commodore's rules have been discovered. In most cases it is games rather than applications software that "guru out!". The reason for this is that the Amiga's powerful built in functions are situated in massive libraries in the ROM chip and to find any of these functions the programmer is supposed to look through a list to find the address of the function he or she wants to use and then jump to that address. However, in the interests of speed many games programmers don't bother to look through the lists, and just jump to the position that they expect to find the function in. In V1.3 the positions of some functions within the libraries has changed, thus when one of the naughty programs jumps to the position it expects to find a particular function and doesn't find it, a guru results. This is all too familiar to current V1.3 A500 owners.

I hope all reviewers of games listen to your plea James, or better than that maybe the games programmers themselves will get the hint!

AMIGA

	ELIMINATOR		CAPTAIN BLOOD		VIXEN		TEENAGE QUEEN		CHAMP AMERICAN FOOTBALL		DEFENDER OF THE CROWN		NIGEL MANSELL'S GRAND PRIX		SKYCHASE		THREE STOOGES		XENON	
	RRP	SRP	RRP	SRP	RRP	SRP	RRP	SRP	RRP	SRP	RRP	SRP	RRP	SRP	RRP	SRP	RRP	SRP	RRP	SRP
BAAL	39.94	19.96	44.90	20.96	39.94	17.46	39.90	20.96	44.94	18.96	49.90	20.92	44.90	17.46	39.94	19.96	49.94	21.96	39.94	20.96
BALANCE OF POWER 1990	44.98	22.98	49.94	23.98	44.98	20.48	44.94	23.98	49.98	21.98	54.94	23.94	49.94	20.48	44.98	22.98	54.98	24.98	44.98	23.98
BATMAN	44.94	22.46	49.90	23.46	44.94	19.96	44.90	23.46	49.94	21.46	54.90	23.42	49.90	19.96	44.94	22.46	54.94	24.46	44.94	23.46
BATTLECHESS	44.94	23.96	49.90	24.96	44.94	21.46	44.90	24.96	49.94	22.96	54.90	24.92	49.90	21.46	44.94	23.96	54.94	25.96	44.94	24.96
CRAZY CARS 2	44.98	21.48	49.94	22.48	44.98	18.98	44.94	22.48	49.98	20.48	54.94	22.44	49.94	18.98	44.98	21.48	54.98	23.48	44.98	22.48
DENARIS	39.98	20.98	44.94	21.98	39.98	18.48	39.94	21.98	44.98	19.98	49.94	21.94	44.94	18.48	39.98	20.98	49.98	22.98	39.98	21.98
DRAGONNINJA	44.94	22.46	49.90	23.46	44.94	19.96	44.90	23.46	49.94	21.46	54.90	23.42	49.90	19.96	44.94	22.46	54.94	24.46	44.94	23.46
DRAGON'S LAIR (1 MEG)	64.94	33.96	69.90	34.96	64.94	31.46	64.90	34.96	69.94	32.96	74.90	34.92	69.90	31.46	64.94	33.96	74.94	35.96	64.94	34.96
DUNGEON MASTER (1 MEG)	44.98	22.48	49.94	23.48	44.98	19.98	44.94	23.48	49.98	21.48	54.94	23.44	49.94	19.98	44.98	22.48	54.98	24.48	44.98	23.48
ELITE	44.94	21.46	49.90	22.46	44.94	18.96	44.90	22.46	49.94	20.46	54.90	22.42	49.90	18.96	44.94	21.46	54.94	23.46	44.94	22.46
F16 FALCON	49.98	23.98	54.94	24.98	49.98	21.48	49.94	24.98	54.98	22.98	59.94	24.94	54.94	23.48	49.98	23.98	59.98	25.98	49.98	24.98
FED OF FREE TRADERS	49.94	26.98	54.90	27.98	49.94	24.48	49.90	27.98	54.94	25.98	59.90	27.94	54.90	24.48	49.94	26.98	59.94	28.98	49.94	27.98
FISH!	44.94	21.46	49.90	22.46	44.94	18.96	44.90	22.46	49.94	20.46	54.90	22.42	49.90	18.96	44.94	21.46	54.94	23.46	44.94	22.46
GALDREGON'S DOMAIN	39.94	18.96	44.90	19.96	39.94	16.46	39.90	19.96	44.94	17.96	49.90	19.92	44.90	16.46	39.94	18.96	49.94	20.96	39.94	19.96
HEROES OF THE LANCE	44.98	23.98	49.94	24.98	44.98	21.48	44.94	24.98	49.98	22.98	54.94	24.94	49.94	21.48	44.98	23.98	54.98	25.98	44.98	24.98
HOSTAGES	44.94	21.46	49.90	22.46	44.94	18.96	44.90	22.46	49.94	20.46	54.90	22.42	49.90	18.96	44.94	21.46	54.94	23.46	44.94	22.46
HYBRIS	44.94	22.96	49.90	23.96	44.94	20.46	44.90	23.96	49.94	21.96	54.90	23.92	49.90	20.46	44.94	22.96	54.94	24.96	44.94	23.96
KRISTAL	49.98	23.98	54.94	24.98	49.98	21.48	49.94	24.98	54.98	22.98	59.94	24.94	54.94	21.48	49.98	23.98	59.98	25.98	49.98	24.98
LOMBARD RAC RALLY	44.94	21.46	49.90	22.46	44.94	18.96	44.90	22.46	49.94	20.46	54.90	22.42	49.90	18.96	44.94	21.46	54.94	23.46	44.94	22.46
MENACE	39.94	19.96	44.90	20.96	39.94	17.46	39.90	20.96	44.94	18.96	49.90	20.92	44.90	17.46	39.94	19.96	49.94	21.96	39.94	20.96
OPERATION NEPTUNE	44.94	21.46	49.90	22.46	44.94	18.96	44.90	22.46	49.94	20.46	54.90	22.42	49.90	18.96	44.94	21.46	54.94	23.46	44.94	22.46
PACMANIA	39.94	18.96	44.90	19.96	39.94	16.46	39.90	19.96	44.94	17.96	49.90	19.92	44.90	16.46	39.94	18.96	49.94	20.96	39.94	19.96
POWERDROME	44.94	23.96	49.90	24.96	44.94	21.46	44.90	24.96	49.94	22.96	54.90	24.92	49.90	21.46	44.94	23.96	54.94	25.96	44.94	24.96
PURPLE SATURN DAY	44.94	21.46	49.90	22.46	44.94	18.96	44.90	22.46	49.94	20.46	54.90	22.42	49.90	18.96	44.94	21.46	54.94	23.46	44.94	22.46
ROBOCOP	44.94	22.46	49.90	23.46	44.94	19.96	44.90	23.46	49.94	21.46	54.90	23.42	49.90	19.96	44.94	22.46	54.94	24.46	44.94	23.46
ROCKET RANGER	49.98	24.98	54.94	25.98	49.98	22.48	49.94	25.98	54.98	23.98	59.94	25.94	54.94	22.48	49.98	24.98	59.98	26.98	49.98	25.98
SARGON 3 CHESS	44.94	21.46	49.90	22.46	44.94	18.96	44.90	22.46	49.94	20.46	54.90	22.42	49.90	18.96	44.94	21.46	54.94	23.46	44.94	22.46
SPEEDBALL	44.98	22.48	49.94	23.48	44.98	19.98	44.94	23.48	49.98	21.48	54.94	23.44	49.94	19.98	44.98	22.48	54.98	24.48	44.98	23.48
STARGLIDER 2	44.94	21.46	49.90	22.46	44.94	18.96	44.90	22.46	49.94	20.46	54.90	22.42	49.90	18.96	44.94	21.46	54.94	23.46	44.94	22.46
SWORD OF SODAN	44.98	21.98	49.94	22.98	44.98	19.48	44.94	22.98	49.98	20.98	54.94	22.94	49.94	19.48	44.98	21.98	54.98	23.98	44.98	22.98
TV SPORTS FOOTBALL	49.98	23.98	54.94	24.98	49.98	21.48	49.94	24.98	54.98	22.98	59.94	24.94	54.94	21.48	49.98	23.98	59.98	25.98	49.98	24.98
UNIVERSAL MIL. SIMULATOR	44.94	21.46	49.90	22.46	44.94	18.96	44.90	22.46	49.94	20.46	54.90	22.42	49.90	18.96	44.94	21.46	54.94	23.46	44.94	22.46
WEC LE MANS	44.94	22.96	49.90	23.96	44.94	20.46	44.90	23.96	49.94	21.96	54.90	23.92	49.90	20.46	44.94	22.96	54.94	24.96	44.94	23.96
ZAK McKRAKEN	44.98	23.98	49.94	24.98	44.98	21.48	44.94	24.98	49.98	22.98	54.94	24.94	49.94	21.48	44.98	23.98	54.98	25.98	44.98	24.98

All offers subject to availability. Look out for Myth, only from Official Secrets

LOOK OUT FOR REVIEWS OF MYTH by MAGNETIC SCROLLS – IT'S ONLY AVAILABLE TO MEMBERS OF OFFICIAL SECRETS – THE CLUB FOR PEOPLE WHO WANT MORE

SPECIAL RESERVE - THE CLUB THAT OFFERS YOU TWO.....

Pick a pair of games. One from the list down the left side and one from the selection across the top. RRP's are the combined retail prices. SRP's are our total prices for **both** games including post and packing. Pacmania and Skychase are highlighed as an example, our price is 18.96 for the two. We only sell to members of Special Reserve. If you are not already a member please add the £4.00 membership fee. Please note that we add a 50p surcharge per game for orders placed by telephone. We sell almost all games individually at truly amazing prices. For full details please send a stamped addressed envelope or telephone on 0279 600204. All games individually boxed and new. Membership entitles you to:

Bi-monthly 12-page Buyers Guide, folder & membership card
Sales hotline open 7 days each week and weekday evenings
Best games at best prices (over 700 products)
No commitment - you don't **have** to buy anything
All games despatched **individually** by first class post
Instant refunds for delayed products (on request)

NAME _____
ADDRESS _____
_____
_____
POST CODE _____

MEMBERSHIP £4.00
GAME _____ £
GAME _____ £
AMIGA TOTAL £

Cheque, P.O., Access, Visa or Amex to:
SPECIAL RESERVE
P.O. BOX 847, HARLOW
CM21 9PH
AUI D3
Give expiry date if paying by credit card.
Special Reserve is a department of Inter-Mediates Ltd
Registered in England number 2054713

COMPUNET

Stuart Williams examines an increasingly popular on line public communications service.

Compunet may seem at first glance to be yet another Viewdata system along the lines of Prestel/Micronet. True, they both use a system of information screens or 'pages' instead of the continuous scrolling stream of ASCII text which you will have experienced on Bulletin Boards, Email services or conferencing services such as CIX; they both also employ a system of page numbers and keywords to identify specific areas of their database. Here, though, the similarity ends.

To access Compunet, all you need is an Amiga (or C64), a modem (preferably Hayes compatible, but a cheapo 1200/75 baud manual modem can be used), and the Compunet Terminal software, written by Ariadne and distributed as Shareware as well as being available direct from Compunet. As the system was originated for use exclusively for use by Commodore 64 owners, the sophisticated and user friendly terminal software cleverly emulates the C64's forty column block graphics and colours, taking advantage of the Amiga's hi–res sixteen colour eighty column mode to implement display of the Compunet system in several windows which can be moved around in the usual Intuition fashion, but cannot be sized.

"It is also possible to capture pages from the system, edit them, and re-send them to the Compunet computer."

Instead of negotiating a way around via a seemingly endless stream of menus which need numbers keyed to move from page to page, the Compunet structure is more a system of branched directories and subdirectories, in a tree–like structure like the disk directories or 'drawers' on the Amiga. Moving through the system is merely a matter of pointing and double clicking with the mouse!

One of the windows of your terminal screen display shows the directory structure through which the user is moving, while another shows the actual information on the 'page' of graphics and text which has been downloaded into your computer. Compunet downloads its pages into the terminal software's editor, where the information may be saved, printed or simply left to be overwritten by subsequent pages. The editor is multi–tasking, and allows the user to edit and prepare pages of graphics and text on or offline, even when downloading a program! These pages can then be transmitted to other Compunet users, or uploaded to the system. It is also possible to capture pages from the system, edit them, and re–send them to the Compunet computer!

As well as options attached to the windows themselves, the menu bar is used in time honoured fashion to allow you to check for incoming mail, set the 'life' of any file or information which you upload, check your Compunet account details, vote on what you think of items on display, or leave the system.

One final window, much smaller, appearing just after connection to Compunet, entitled 'Diagnostics', shows the progress of data transfer between the Compunet system and the Amiga; interestingly, the data stream is fully error checked, which means that you should never get a garbled page even on a noisy 'phone line! Unfortunately, this works by causing any corrupted data to be re–sent, which inevitably entails a decrease in speed.

There are many club areas, including the Amiga User Group and the Compunet Computer Club, plus a wide variety of Special Interest Groups (areas containing articles, news, comment and hints and tips as well as messages relating to specific subjects or aspects of computing or other hobbies). The great advantage of Compunet is that the system is interactive, and much of the content is written by the enthusiastic subscribers themselves. The system is much like a huge bulletin board with graphics! Users are actively encouraged to contribute, and it is even possible to set up your own area on the system at a negligible cost (45,000 page/days for £10 if you are a Gold Subscriber – a page/day is one page or one k or program stored for one day). If you are considering starting up a bulletin board system yourself, but are shy of the necessary capital, setting up your own area on Compunet could well prove a very acceptable alternative! It is even possible to advertise your talents as a programmer by uploading a demo of your work in one of the places set aside for the purpose, for the software talent scouts to have a look at.

The international 'Newsbytes' service is available on Compunet; this is a popular service once only available on the expensive American comms service 'BIX', which can now be found on several systems worldwide, including The Source and Compulink's CIX in the UK. For those who prefer to chat instead of read, or are addicted to Multi User Games, there is Federation II, a space trading game, and Partyline, a chatline service. To use these two you have to pay a time charge of £1.50 per hour for Federation II, and £1.00 for Partyline. You can also download add–ons or 'links' to the Amiga terminal software which open up a true scrolling terminal window for these two services – much easier to get along with for this kind of activity. The scrolling window disappears when you leave Partyline or Federation II.

There are many programs to download for Amiga users, and the telesoftware system is free of charge. In addition, there are new features oming soon such as the gradual implementation of 1200 baud full duplex access as well as the current 1200/75 baud service, which should speed uploading, plus a new automatic upload indexing system (which shows programs and other items uploaded to the system every hour).

If you are an Amiga user into communications, and you are looking for a commercial service that not only contains the fun and interactive elements of bulletin boards but also has many of the advantages of commercial systems such as cheap local 'phone rates for 95% of the UK, then Compunet could be the place for you.

S.W.

Contact: Unit 26, Sheraton Business Centre, Wadsworth Road, Perivale, Middlesex, UB6 7JB. Tel: 01 997 2591

COMPUNET – What it costs...

Subscription charges are between £12 and £19.50 per quarter.

Network charges range between 80p and £4 per hour.

Storage charges – Subscribers receive between 500 and 2,000 free page/days each quarter.

16 BIT CENTRE

MASSIVE DISCOUNTS

ALL PRICES INCLUDE VAT + COURIER

AMIGA EXTRAVAGANZA PACK INC.
Photon Paint, Sonix, 24PD games, Karate Kid 2, Carrier Command, Goldrunner, Joystick **£429**

AMIGA TEN STAR PACK INC
10 top games and 23 PD games **£389**

PHILIPS 8833 Stereo Monitor inc. Lead **£229**

OTHER HARDWARE

	£
CITIZEN 120D inc Lead	139
CITIZEN 180E inc Lead	179
STAR LC-10 Mono inc Lead	289
STAR Col Printer inc Lead and colour ribbon	249
STAR 24/10 inc. Lead	339
COMMODORE 1084 inc Lead	235
DIGI-VIEW GOLD	125
EPSON LQ500 inc Lead	319
NEC P2200 Printer inc Lead	319

SOFTWARE

	£
THE WORKS	69
WORDPERFECT	175
SUPERBASE PRO	199
KIND WORDS V2	39
VIDEO TITLER	95
LIGHTS/CAMERA/ACTION	49
LATTICE C Ver 5	165

16 BIT CENTRE
UNIT 17,
LANCASHIRE FITTINGS,
SCIENCE VILLAGE,
CLARO ROAD,
HARROGATE HG1 4AF

VISA

TEL. (0423) 526322

HAMMERSOFT

AMIGA MAIL ORDER SPECIALIST

VISA

LEISURE

AFTERBURNER	*18.50
Amiga Gold Hits (4 Pack)	18.90
Arkanoid Revenge of Doh	16.50
BAAL (Psygnosis)	13.50
BATTLE CHESS	17.90
Barbarian (Palace)	13.50
BARBARIAN II	*13.50
BATMAN	16.50
Better Dead Than Alien	12.99
Bombuzal	16.50
Buggy Boy	16.25
CAPTAIN BLOOD	16.50
Chubby Gristle	12.99
Crash Garrett	15.99
DOUBLE DRAGON	13.50
DRAGON'S LAIR	35.00
DRILLER	16.50
ECO	15.99
Elimination	15.50
ELITE	16.50
Empire Strikes Back	13.50
FERNANDEZ MUST DIE	16.50
FUSION	17.50
Future Tank	12.00
Galactic Conqueror	16.50
GAUNTLET II	18.90
Garrison I or II	18.90
Hard Ball	16.25
Highway Hawks	13.50
Hostages	16.50
HYBRIS!	16.50
Ikari Warriors	16.50
INTERNATIONAL KARATE +	18.50
INTERNATIONAL SOCCER	13.50
Leatherneck	13.50
LOMBARD/RAC RALLY	16.50
Mach III	10.99
Major Motion	12.99
Manhattan Dealers	15.99
MANSELL'S GRAND PRIX	17.50
MENACE	13.50
Munsters	16.50
NEBULUS	15.50
NETHERWORLD	15.00
OPERATION WOLF	16.50
OUTRUN	15.50
PACMANIA	13.50
Pandora	12.99
Phantom Fighter	15.00
PIONEER PLAGUE	16.50
Platoon	15.99
P.O.W.	20.50
Powerdrome	*17.90
PUFFY'S SAGA	*17.90
Purple Saturn Day	16.50
R-TYPE	*18.50
Road Blasters	*18.90
ROBOCOP	*16.50
ROCKET RANGER	19.90
SENTINEL	12.99
Side-Arms	15.00
Skate Ball	*17.50
Sky Chase	13.50
Space Racer	13.50
SPEEDBALL	16.50
STARGLIDER II	16.50
Star Ray	16.25
Stir Crazy with BOBO	12.99
SUPER HANG-ON	18.50
SUPERMAN	16.50
SWORD OF SODAN!!	16.50
Test Drive	17.50
Three Stooges	19.90
THUNDERBLADE	18.90
TURBO CUP	13.50
TV FOOTBALL	19.90
VIRUS	13.50
Whirligig	12.99
Zynaps	14.99

ADVENTURE & SIMULATION

BARD'S TALE I OR II	17.45
BATTLE CHESS	17.90
Burmuda Project	16.25
CARRIER COMMAND	16.25
CHRONO QUEST	19.90
Corruption	16.50
DUNGEON MASTER (1 MEG)	16.50
Faery Tale Adventure	21.90
F-16 FALCON	19.90
Federation of Free Traders	*22.50
Ferrari Formula 1	17.50
FISH	16.50
Flight Sim. II	26.90
Scenery 7 or 11	16.50
Japan or Europe	13.50
Galdregon's Domain	13.50
HEROES Of The LANCE	18.50
INTERCEPTOR	17.90
JET	26.90
Joan of Arc	18.50
KRISTAL	*19.90
LANCELOT	16.50
Leaderboard Birdie	18.90
Legend of the Sword	16.50
MORTVILLE MANOR	16.50
Scrabble Deluxe	13.50
SENTINEL	13.25
Sex Vixens from Space	16.90
Tangle Wood	12.99
Time & Magic	13.50
TIMES OF LORE March	*16.50
Ultima III or IV	16.90
Ultima V	*20.50
UNIVERSAL MILITARY SIM	16.50
WAR IN MIDDLE EARTH 9/2/89	*16.50

GRAPHICS & MUSIC

Animator/Images	75.00
Videoscape 3D 2.0 (PAL) (1 MB)	107.50
Deluxe Paint II (PAL)	49.90
Deluxe Video (PAL)	49.90
Deluxe Productions (1 MB)	110.00
Digipaint (PAL)	44.00
DIGIVIEW GOLD (PAL)	119.00
Fantavision (PAL)	32.00
PHOTON PAINT (PAL)	45.00
Sculpt 3D (PAL)	62.00
Sculpt 3D Animate (PAL) (1 MB)	102.00
TV Show (PAL)	55.00
TV Text (PAL)	55.00
Aegis Video Titler (PAL)	89.00
Aegis Audiomaster	34.00
Aegis Sonix 2.0 (2 Drives)	45.00
Deluxe Music	49.90

QUALITY JOYSTICKS

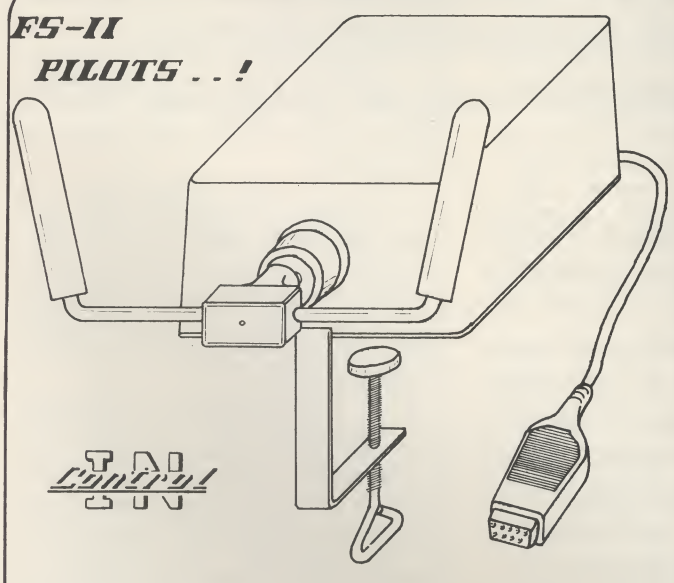
Cheetah Mach 1 +	13.50
Comp Pro 5000	13.50
Comp Pro Extra (clear)	14.90
CRUISER	9.99
Quickshot II Turbo	12.50
Light gun	45.00

HARDWARE UK Only

AMIGA A500 & TV Mod	375.00
As above with 10 game pack	395.00
AMIGA A500, 1084 Monitor, etc	619.00
A501 1/2 Meg Expansion/ Clock	139.00
External 3.5" 1 Meg Drive	99.99
Commodore Blank Disks x10	16.50
Disk Box (Holds 120)	10.95

Send cheques/postal orders to:
HAMMERSOFT
Dept A, 33 Mill Road
Hethersett, Norwich
Norfolk NR9 3DS

*AVAILABLE ON RELEASE
Prices are all inclusive with
1st CLASS POST IN THE UK
EEC Please add £2.00 per item
Orders/Enquiries: TEL: (0603) 812416
RETURN OF POST SERVICE ON STOCK ITEMS



PROPORTIONAL JOYSTICK-YOKE

Now the hardware begins to live up to the software! Control your Flight Simulator II aeroplanes in a REALISTIC way. Pull back yoke for up elevator and, as you take off, turn the yoke to bank your plane. Freely mix the controls for GREAT AEROBATICS! PROPORTIONAL and INSTANT response of the control surfaces brings FS-II ALIVE!

Nylon and stainless steel construction, housed in a textured ABS black box. Complete with 50mm black steel clamp and red handles.

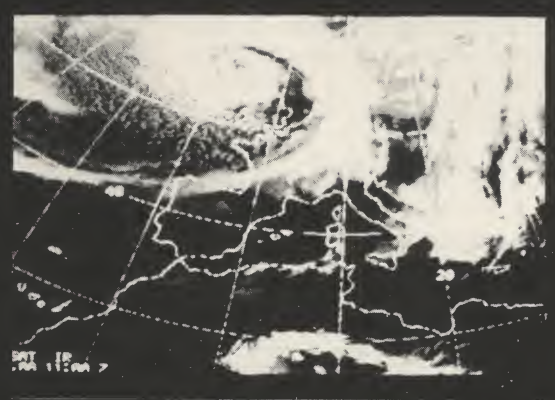
U.K./C.I./B.F.P.O.	£29.95	Cheques & P.O.'s only
Europe	£31.45	Eurocheque/International money drawn on a U.K. bank. Payable to: INCONTROL
U.S.A./Canada	£35.95	
Australia/N.Z.	£36.95	

post to : INCONTROL
P.O. BOX 183
CAMBRIDGE
CB4 2XQ
ENGLAND

Prices include post & packing.
U.K. : 14 days or less.
Overseas : 14 days + Shipping time.
Tel. 0223-313749 Trade enq. welcome

ICS

AMIGA-FAX



PICTURES FROM THIN AIR!

Weather maps, Satellite
Pictures, Press photos
Plugs into any short wave radio receiver
Satellite receiver available

£109.95 inc. VAT (£2.50 P&P)

Send for details
ICS Electronics Ltd
PO Box 2, Arundel
West Sussex, BN18 0NX
Tel: 024 365 655
Fax: 024 365 575

Access

VISA

AmigaDOS Inside and Out

Abacus

AmigaDOS is many things, advanced it is - fast and friendly it most certainly is not. So where does this leave the average user? Lost usually. In the absence of good reference material Abacus has come to the rescue once again.

For absolute beginners, I can not recommend this book - which consists of over 250 pages dedicated to AmigaDOS. Instead, obtaining a copy of excellent AmiKit (reviewed in the February 1989 issue of *Amiga User International)* would be a much better idea. I say this because like many Abacus books, this one is not really aimed at non-computer literature folk. On the whole in fact, it serves as a welcome follow on from the AmiKit literature even though the two are produced completely independently.

From the outset, the authors encourage getting the reader down to the business of sitting at a keyboard and doing, rather than simply explaining what all of the commands do and how to use them - this comes later. In so doing, the process of learning what is essentially quite a heady subject comes more naturally than could otherwise be achieved. The first job is to make a copy of the original Workbench disk, since a fairly simple mistake made while editing the startup script file could make the disk useless.

The rest of the first chapter is dedicated to getting the reader familiar with some of the more unusual features of AmigaDOS. For example, just about everyone who has used a PC will know the DIR command. This is used to obtain a directory - that is a listing of the files - on a disk. Those who have dipped slightly further will know the drives have the logical device assignments DF0: to DF3:. Few though will know almost all commands in the AmigaDOS have a built-in help feature. Simply typing the command name followed by a query thus: DIR ? Results in the command producing what is known as a command template. In release 1.2, DIR's command template is DIR, OPT/K.

In the second chapter however, this and many other commands have - as the book explains at length - been substantially modified and added to in release 1.3. The coverage of release 1.3 of the operating system amy seem a little premature since it is only just starting to appear. Even so, I have tried many of the examples given with an American version of 1.3 and as yet have spotted no obvious errors.

In fact coverage of 1.3 does serve as a useful example, and it is well worth reading this book just to see what you may be missing out. Along with the coverage of the commands, the writers have included a small section on the Diskdoctor command. This even goes as far as to list all of the possible error messages and give fuller descriptions of each one.

The next two chapters cover the devices themselves, like CON:, PAR:, SER: and so on with some useful examples, and Workbench 1.3. Here you will find an explanation of some of the new features like the recoverable RAM disk and other new devices like NewCon and Pipe.

From here on the book starts to get to grips with some of the more interesting features of AmigaDOS, what Abacus term 'tricks and tips'. At long last there is a brief but informative discussion of the correct use of wildcards. Users of older Commodore machines must be left wondering what was wrong with the old * and ? symbols. They are still there but the * symbol has been replaced by a #. To make matters worse still the # sign can search for repeating strings. All of this is explained.

Perhaps the most confusing part of AmigaDOS is the script files, MS-DOS users will know them as batch files. Seemingly to complicate matters some bright spark called the system 'startup script, Startup-sequence'. This is all well and good until you try and edit it using CLI. Essentially, a script is a series of commands executed by CLI rather like a program. In fact it could be thought of as letting the computer type a set of commonly used commands for you. In truth of course they are more involved than that. In fact the book explains how to customise your startup for your personal requirements - and even get it to ask you questions while the machine boots.

For the real enthusiasts, the book includes a section on multitasking from both CLI and Workbench, which includes some interesting tips on how to get round the all-to-common Task Held alert. Plus some explanation of how multitasking is implemented on the Amiga and some tips on using task priority lists to speed up important operations. For example, you could set off your printer as a low priority job printing something in the background, while giving the drives a slightly higher priority and speeding disk access.

Finally the book delves deep in to the workings of the DOS itself and gives details of how to create your very own CLI commands. This section includes some listings in C, although such things should only be attempted when you are confident in your abilities as a programmer.

All in all, 'AmigaDOS Inside and Out' is not a bad read. As I have said, it is not for the raw beginner, but should satisfy a thirst for more knowledge for more advanced users. As is usual with Abacus books, the contents are well laid out - but the index is painfully short. There is a pleasant quick reference guide at the rear and a single appendix listing the escape sequences used to generate colour in CLI scripts. The real benefit of this book is its thorough coverage of the CLI in versions 1.2 and 1.3. I expect therefore, it will replace the Bantam quide as the standard reference to AmigaDOS. Recommended.

M.S.

Price £19.95

AMIKIT IS HERE!
AMIKIT IS HERE!
AMIKIT IS HERE!
AMIKIT IS HERE!
AMIKIT IS HERE!
AMIKIT IS HERE!

No more frustrated hours spent staring at your computer screen! No more blundering through the Workbench or CLI — the ultimate aid for novices and experts alike has arrived!

Step by step, AmiKit helps you explore and benefit from the awesome power of your Amiga. From the most basic to the most complex commands. AmiKit teaches how to gain control and confidence using your machine, whether it's an A500, 1000 or 2000. And what's more, AmiKit includes over 30 Public Domain Software programs, including: workbench 1.3; a virus checker; a database; a spreadsheet; a word processor; games; and much more!

Amikit is one of the most effective ways to successfully navigate your way throughout the Workbench and CLI. As a special introductory offer from Amiga User International, you can get AmiKit for £19.95 (plus £1.50 for shipping) — £5 off the recommended retail price — an amazing bargain! When we reviewed AmiKit, we were extremely pleased with the package, and we know you will be, too!

To Amiga User International
40 Bowling Green Lane,
LONDON EC1R 0NE

I would like to purchase AmiKit at the special price of £19.95 + £1.50 p&p (£21.45).

Please make cheques payable to CROFTWARD LIMITED or debit my ACCESS account:

Expiry date _____

Signature _____

Name _____

Address _____

_____

_____

Telephone _____

We obtain the AmiKit directly from the U.S.A., so please allow 28 days for delivery.

A9041

STOP PRESS!

Super-charge

De Gale Marketing has recently introduced the first of a new range of joysticks.

The joystick, the Quick Joy Supercharger, will retail for £12.95 and has a host of functions which make it a game player's dream. It will be the first product released by De Gale Marketing on an exclusive basis in the UK. Other joysticks in the Quick Joy range will be released in the near future.

The Supercharger has 8 directional control, 6 microswitches, 4 suction pads, 2 fire buttons (trigger finger and thumb) and one auto-fire button. The joystick also has a 9 pin Atari type interface, a pistol grip handle and an Amstrad CPC selection button which gives the joystick the unusual asset of having an auto-fire button running for Amstrad CPC computers. The joystick is also available for all the other major computers.

Contact: De Gale Marketing Ltd., 81 Tottenham Court Road, London W1A 1EY. Tel 01-637 5735 / 01-631 1189.

Times of Lore

Origin System's highly original arcade adventure, TIMES OF LORE, now available on the Amiga.

A combination of great arcade action and Origin's expertise in role-playing adventures make this one of the company's most eagerly-awaited products.

Set in the troubled Kingdom of Alboreth, it is your task to restore good where evil has triumphed. Through some 12,000 screen locations, you can ensure that the rightful king is restored to his throne.

Already a major hit on the Commodore 64, the Amiga version looks set to further enhance Origin's reputation for quality software.

Price: £24.95, Contact: Microprose, 2, Market Place, Tetbury, Glos GL8 8DA. Tel:0666 54326 Fax: 0666 54331 Telex: 43422 MPS UKG.

Designer Database

Software Visions Inc. has introduced its Designer Database series for the Amiga. The Designer Database series is a collection of many databases and macros, organised in a ready-to-use format, designed to work with Software Visions' Microfiche Filer and Microfiche Filer Plus database engines.

The first two disks in the Designer Database series, to be released on March 31, are the Home I and Business I disks. The Home I disk includes such classic applications as videotape, audio recording, stamp, and recipe catalogues, a home budget, a personal inventory, and more. The Business I disk includes a daily calender, mail merge (with macros), expense report, general ledger, a sophisticated invoicing/inventory application with macros for inventory processing and more.

Prices: $39 for Home I; $59 for Business I. Soon to follow will be Video/Graphics and Sound I, Home II, and Business II, Software Visions tell us.

Contact: Software Visions, P.O. Box 3319, Framingham, MA 01701. Tel: (508) 875-1238.

HUMGOLD COMPUTERS LTD.

for your AMIGA requirements

Amiga Games	RRP	Our Price
Bards Tale I & II (each)	£24.94	£20.21
Battlechess	£24.94	£20.21
Birdie (Leaderboard & Leaderboard Tournament)	£24.94	£20.59
Captain Blood	£24.94	£19.96
Elite	£19.95	£15.96
Ingrid's Back	£19.95	£15.96
Interceptor	£24.94	£20.21
Outrun	£24.99	£20.10
Pacmania	£19.95	£15.96
Reach For The Stars	£24.94	£20.21
Rocket Ranger	£29.95	£24.09
Shoot 'Em Up Construction Set	£24.94	£19.96
Starglider 2	£24.99	£20.10
Temple Of Apshai Trilogy	£24.94	£20.59
Who Framed Roger Rabbit?	£29.95	£23.21

Amiga Software	RRP	Our Price
City Desk V2	£149.95	£119.96
Cygnus Ed	£75.00	£60.38
Deluxe Paint II/Deluxe Print I	£69.95	£56.66
Deluxe Productions	£139.94	£113.36
Facc II	£24.00	£19.32
Fantavision	£39.00	£32.48
K-Gadget	£29.95	£24.95
Kindwords	£49.00	£40.43
Lattice C V5.0	£241.50	£196.22
Light! Camera! Action!	£57.50	£47.44
Mailshot Plus	£49.94	£40.58
Sculpt 4D Professional	£368.00	£312.80
Superbase Professional	£249.95	£199.96
Word Perfect 4.1	£228.85	£188.81
Word Perfect Library	£113.85	£93.93
Public Domain Disks		£2.75 each or £25.00 for 10
Public Domain Catalogue Disk		£3.00

Amiga Hardware	RRP	Our Price
40MB Hard Drive	£595.01	£559.31
Digiview 3.0 with A500 Adaptor	£149.95	£134.95
Future Sound	£79.95	£71.55
HP Deskjet Printer	£914.25	£767.97
Perfect Sound	£79.95	£69.95
Supra 2400 Modem	£199.95	£179.96
Amiga 500 + Photon Paint + TV Modulator	£399.99	£365.02
Workbench 1.3	£15.00	£12.74

Orders (Cash/cheque only) to:

HUMGOLD COMPUTERS LTD
(Mail order dept.)
85 Longhurst Road,
Lewisham, London SE13 5NA

01-852 3992
(ansafone) for full price list
All prices are subject to change without notice.

The Instant Catalog

3D Pool	12.50	Fish	15.99	Prison	12.50
Advanced Ski Simulator	12.50	Flying Shark	12.50	Purple Saturn Day	15.99
After Burner	17.99	Football Manager 2	12.50	Questron 2	17.99
Arkanoid 2 - Revenge of Doh	15.99	Freedom	14.99	R Type	17.99
Auto Duel	15.99	Fusion	17.50	Raffles	12.50
Baal	12.50	GFA Basic V 3.0	46.99	Return of the Jedi	12.50
Balance of Power 1990	15.99	Galdregon's Domain	12.50	Road Blasters	12.50
Ballistix	12.50	Games : Winter Edition	12.50	Robocop	15.99
Barbarian 2	12.50	Gauntlet 2	17.99	Rocket Ranger	18.99
Bards Tale 2	17.50	Gold Hits 1	17.99	Roger Rabbit	17.99
Batman	15.99	Gold Runner 2	12.50	Shoot-em-up Construction Kit	15.99
Battle Chess	17.50	Heroes of the Lance	17.99	Side Arms	14.99
Battle Hawks 1942	17.99	Highway Hawks	12.50	Skate or Die	17.50
Billards	12.50	Hostages	15.99	Soldier of Light	15.99
Blasteroids	15.99	Human Killing Machine	10.99	Space Harrier	15.99
Bombuzal	15.99	I, Ludicrus	12.50	Space Quest 2	17.99
California Games	14.99	Interceptor F/A 18	17.50	Speedball	15.99
Captain Blood	15.99	International Karate +	17.99	Starglider 2	15.99
Captain Fizz meets Blasterons	9.50	Joan of Arc	17.99	Super Hang-On	17.99
Chrono Quest	16.99	Kennedy Approach	15.99	Superman	15.99
Cosmic Pirate	12.50	Kristal	18.99	Sword of Sodan	18.99
Crazy Cars 2	15.99	L&D Storm	14.99	TV Sports Football	18.99
Cybernoid 2	14.99	Last Duel	10.99	Techno Cop	14.99
DNA Warrior	12.50	Lombard RAC Rally	15.99	Teenage Queen	12.50
Dark Fusion	14.99	Lords of Rising Sun	18.99	Thunder Blade	17.99
Deflektor	14.99	Manhattan Dealers	15.99	Times of Lore	15.99
Deluxe Paint 2	48.99	Maria Whitaker's Strip Poker	9.50	Titan	12.50
Deluxe Print 2	34.99	Mickey Mouse	14.99	Track Suit Manger	12.50
Denaris	14.99	Millennium 2.2	14.99	Triad Vol 1	18.99
Double Dragon	14.99	Mini Golf	14.99	Turbo Cup	12.50
Dragon Ninja	15.99	Motor Masscare	14.99	Turbo Trax	12.50
Dragon Scape	12.50	Nebulus	14.99	Universal Military Simulator	15.99
Dragon's Lair (1 Meg)	32.99	Off Road Racing - 4x4	14.99	Victory Road	9.50
Driller	15.99	Operation Wolf	12.50	Vindicators	12.50
Dugger	12.50	Out Run Europa	10.99	War in Middle Earth	15.99
Dungeon Master (1 Meg)	15.99	Out Run	14.99	Wec Le Mans	15.99
Eliminator	14.99	Pacmania	15.50	Weird Dreams	15.99
Elite	15.99	Phantom Fighter	12.50	Xenon	12.50
Emmanuelle	12.50	Pioneer Plague	15.99	Zak McKracken	17.99
Excalibur	9.50	Populous	15.99	Zany Golf	17.50
Falcon F-16	16.99	Powerdrome	17.50	Airborne Ranger	14.99
Ferrari Formula 1	17.50	President is Missing	15.99	Chessmaster 2000	17.50

PLANET'S Best Buy EST. 1988

INSTANT, Boston House, Abbey Park Road, Leicester LE4 5AN
Mail Order Only. State Computer's make and model.
P&P: 50p on orders under £5. EEC 75p per title.
Whole World £1.50 per title for Air Mail.
New titles sent on the day of release.

Access 0533 510102

FOR DISK PRICES & NEW RELEASES PLEASE RING US.

NEC

Postscript Printer

NOW! £2995 +VAT

(inc. 1 year on site maintenance)

SAVE £1000

150Mb AMIGA TAPE STREAMER

SHIPPING NOW

£795 +VAT

THE VD3+ REAL TIME COLOUR DIGITIZER

PAL AND NTSC - £795 +VAT

The VD3+ allows the user to take an input from any video source, including tape, and digitize it in full 4096 colour in Amiga format.

THE AMIGA CRP GRAPHICS TABLET

A4 - £360 +VAT (Also A3 - £595 +VAT)

Resolution:	0.1 m.m. or 10 point/m.m., or 250 points/inch
Absolute Accuracy:	+/-0.5m.m. (0.020")
Compatible:	Dpaint II, Graphicraft, Digipaint.

POLAROID PALETTE

The system allows the user to take full colour pictures of the computer screen and produce 35mm slides INC.

- Amiga Interface
- Polaroid Palette Image Recorder
- Polaroid dedicated 35mm autowind camera back
- Polaroid 3 1/4" X 4 1/4" print and overhead projection transparency camera
- 35 mm Auto Power Processor
- Illuminated slide cutter/mounter
- Software and Manual

Special Offer £1450 + VAT

NEW 2QQ

Amiga Hard Disks

Compatible with Amiga 500, 1000 and 2000

[All boxed with power supply, fan and relavent SCSI interface]

80 Mb 28ms Hard Drive . . £950 inc. VAT

60 Mb 40ms Hard Drive . . . . £750 inc. VAT

40 Mb 40ms Hard Drive . . . . £650 inc. VAT

20 Mb 65ms Hard Drive . . . . £550 inc. VAT

Burocare Graphic Design Ltd. 211 Kenton Road, Harrow, Middx., HA3 OHD

BESPOKE AND TRAINING SERVICE AVAILABLE Tel. (01) 907 3636 Fax. (01) 907 0027

DIGI-VIEW GOLD

All-New!
Hardware and Software Designed for A500/2000—Even Better Pictures Than Before!

1.

2.

Actual 4096 color Digi-View Gold picture

3. Simply the Best.

The all new Digi-View Gold is the best video digitizer for the Amiga. Period. Nothing else even comes close. Why? The secret is that Digi-View Gold captures 2.1 million colors in memory, giving you an incredible 100,000 apparent colors on screen simultaneously.

And it's easy to use. Just focus your video camera on any object or picture, and in seconds Digi-View Gold turns it into Amiga graphics that glow with vibrant color and clarity. Whether you are creating graphics for desktop publishing, presentations, video, or just for fun, Digi-View Gold gives you dazzling images with amazing simplicity.

Digi-View Gold is designed specifically for the Amiga 500 and 2000, and plugs directly into the parallel port. Digi-View Gold's powerful image capture and manipulation software (version 3.0) now has complete control of color and sharpness, full overscan, extra halfbrite, and a special line art mode for desktop publishing.

Only Digi-View Gold:

- Can digitize in all Amiga resolution modes from 320x256 PAL up to 768x580 PAL (full PAL hi-res overscan)
- Uses 2 to 4096 colors (including extra halfbrite)
- Uses exclusive Enhanced HAM for super fine detail
- Is 100% IFF compatible and works with any graphics software
- Can digitize 21 bits per pixel (2.1 million colors) for the highest quality images possible
- Has advanced dithering routines that give an apparent 100,000 colors on screen simultaneously
- Has powerful Image processing controls for complete IFF picture manipulation

If you want the highest quality graphics for your Amiga, as easy as 1, 2, 3; then you need the new version of the best selling video digitizer of all time: Digi-View Gold.

ONLY £129.95

Digi-View Gold is available now at your local Amiga dealer.
Or call 010-1-913-354-1146

NEWTEK INCORPORATED

*Requires standard gender changer for use with Amiga 1000. Video camera required; not included. NewTek sells a video camera, copy stand, and the Digi-Droid automated filter wheel for Digi-View Gold. If your local retailer doesn't carry these products, call us at 913-354-1146. Digi-View Gold is a trademark of NewTek, Inc. Amiga is a trademark of Commodore-Amiga, Inc.

If you would like to become a member of the Cool Friends of NewTek Club or just be put on our mailing list, write to us at NewTek, 115 West Crane, Topeka, KS 66603 U.S.A. Be seeing you!!

VIEW
D

All-New!
Hardware and Software
Designed for A500/2000—
Even Better Pictures Than Before!

2.

Actual 4096 color Digi-View Gold picture

the Best.

Only Digi-View Gold:

- Can digitize in all Amiga resolution modes from 320x256 PAL up to 768x580 PAL (full PAL hi-res overscan)
- Uses 2 to 4096 colors (including extra halfbrite)
- Uses exclusive Enhanced HAM for super fine detail
- Is 100% IFF compatible and works with any graphics software
- Can digitize 21 bits per pixel (2.1 million colors) for the highest quality images possible
- Has advanced dithering routines that give an apparent 100,000 colors on screen simultaneously
- Has powerful Image processing controls for complete IFF picture manipulation

If you want the highest quality graphics for your Amiga, as easy as 1, 2, 3; then you need the new version of the best selling video digitizer of all time: Digi-View Gold.

ONLY £129.95

Digi-View Gold is available now at your local Amiga dealer.
Or call 010-1-913-354-1146

NEWTEK
INCORPORATED

COMMODORE AMIGA USER INTERNATIONAL — APRIL 1989

AMIGA
INTERNA

APRIL 1989

THE AMIGA ENHANCED!
VIDEO EFFECTS
3D
ICON PAINT
SUPERPLAN
GFA BASIC
PLUS
AMAZING AMIGA ART
AND
EXCLUSIVE SPECIAL OFFERS!!

SAVE £5 ON AN A500 CONTROL CENTRE!

WIN FUTURE SOUND 500 AND MEM EXPAN

0 74470 12129 8
04